



October 2, 2008

Ms. Donna Inman
US EPA Region 8
8ENF-UFO
Technical Enforcement Program
1595 Wynkoop Street
Denver, Colorado 80202-1129

Re: Revised Final Work Plan
Phase 1 of Interim Remedial Action
Keller Trucking Fuel Truck Spill
Polson, Montana.

Dear Ms. Inman,

Environmental Partners, Inc. (EPI) is pleased to submit this *Revised Final Work Plan* for Phase 1 of Interim Remedial Actions at the Keller Transport fuel truck spill at mile marker 5.2 of Highway 35 in Polson, Montana (site). The general location of the site is indicated on Figure 1.

This *Revised Final Work Plan* is being provided on behalf of Keller Transport (Keller) and its insurer, ACE Westchester Specialty Group (ACE). The site is subject to an Administrative Order (Order) under Section 311(e) of the Clean Water Act (CWA) and Section 7003 of the Resource Conservation and Recovery Act (RCRA). The Order was issued by EPA Region 8 on May 22, 2008 and was received by Keller Transport on May 28, 2008. EPI is the technical lead on the project and Mr. Thomas Morin is the Project Coordinator for the site.

This *Revised Final Work Plan* is the second revision of the *Draft Work Plan* dated June 26, 2008 and addresses comments provided by the Environmental Protection Agency Region 8 (EPA) since submitting the *Final Work Plan* dated July 2, 2008. Moreover, since providing its earlier comments, EPA has appointed an on scene coordinator (OSC), Mr. Steven Way. EPI has met with Mr. Way and Ms. Donna Inman on-site, and several technical issues have been negotiated and resolved. Those technical issues related primarily to the practicability and feasibility of tasks presented in the *Final Work Plan* dated July 28, 2008. The revisions requested by EPA, through the OSC and Ms. Inman, are considered by Keller and EPI to be directives under the Administrative Order and, as such, this Work Plan has been revised to include those directives.

EPA's comments to the *Final Work Plan* were provided via an electronic mail attachment on July 28, 2008. The on-site meeting discussed above occurred on September 15 and 16, 2008.

It is EPI's opinion that additional information and data are needed to provide a fully comprehensive scope of work for bringing the site into full compliance with applicable regulations. It is also Keller and

EPI's opinion that conditions at this site do not afford the luxury of completing a full Remedial Investigation/Feasibility Study (RI/FS) prior to making decisions on a Cleanup Action Plan (CAP). Therefore, Keller and EPI propose that the project progress in an iterative fashion with successive phases of work being based upon the findings of earlier phases. EPA will be provided with draft work plans for review and comment prior to each phase of work and Keller and EPI would seek concurrence with EPA on the proposed scopes of work. In this way it will be possible to take a measured and step-wise approach to investigation and remediation without preparing work plans that overreach the available information and which may, with the collection of additional data, not be wholly appropriate for actual site condition. EPA has indicated its concurrence with this approach.

This *Revised Final Work Plan* proposes the scope of work for Phase I of Interim Remedial Actions at the site. Phase I of the Interim Remedial Actions is focused on the following objectives:

- Conducting an interim remedial excavation for highly contaminated soil near the shoreline of Flathead Lake;
- Designing and implementing a system to capture and treat separate-phase hydrocarbons (SPH) and dissolved-phase contaminants in ground water prior to discharge to Flathead Lake;
- Designing and installing indoor air vapor mitigation systems at five residences located above the SPH and/or dissolved-phase plume; and
- Performing additional investigative actions to fill data gaps in the characterization of the nature and extent of the release.

Based upon the compressed working season at the site, some of this scope of work has been started and is ongoing. EPA and other agencies and stakeholders have been receiving updates of site activities via electronic mail.

Successive phases of site work are anticipated to include additional investigation and remediation of the dissolved-phase contaminant plume in areas hydraulically upgradient of the lakeshore and nearer the location of the spill. Appropriate locations for such treatment will be based upon more complete site characterization data.

The remainder of this *Revised Final Work Plan* contains the following sections:

- Background – This section presents a summary of prior occurrences and actions at the site.
- Conceptual Site Model – This section presents a synthesis of the currently available characterization data and EPI's understanding of the nature, extent, fate, and mobility of environmental impacts.

- Scope of Work – This section presents the planned remedial and mitigation actions. Some of these tasks are presented in conceptual terms since data continue to be gathered and the details are not yet finalized. EPA will be kept current on all such actions through routine status updates and as a recipient of all planning and design documents.

Background

The fuel spill occurred on April 2, 2008 and emergency response actions were immediately implemented. The spill site was located up-slope of five homes that are situated between Highway 35 and the Flathead Lake shoreline. The horizontal distance between the spill site and Flathead Lake is approximately 400 feet with an average slope of about 18 percent to the shoreline. The first five homes, from north to south, are known as the Arnold, Kohler, Jones, Gates/Sykes, and Rothwell homes. A site representation is shown on Figure 2.

Subsequent to the spill, strong fuel odors were noted in several of the down-slope homes and separate-phase hydrocarbons (SPH) were noted in small landscape ponds at the Arnold and Kohler properties, and in ground water seeps that discharge to the Flathead Lake shoreline. In response to these findings, the five homes mentioned above were evacuated and a seep collection and temporary water treatment system were constructed and installed. That treatment system utilized air sparging as primary treatment and granular activated carbon (GAC) as secondary treatment prior to discharge to the lake. The discharge was conducted on an emergency basis and a National Pollution Discharge Elimination System (NPDES) permit application has since been filed with the EPA. EPA has reportedly reviewed the permit application and will be requesting revisions to the application before a permit is granted. As of the date of this report, EPI has not received EPA's requested revisions to the NPDES permit application.

The temporary treatment system has since been upgraded to provide better treatment efficiency in the primary treatment cell (*i.e.*, air sparging) and to decrease the contaminant load on the secondary treatment cell (GAC). An additional seep catchment has since been added to capture a release from a seep on the northern portion of the Arnold property (*i.e.*, N143 seep). Routine sampling of the discharge from this seep indicated that concentrations had increased to a point where they exceeded 2.2 micrograms/Liter ($\mu\text{g/L}$) of benzene. Both the Confederated Tribes and Lake County Office of Emergency Management were notified and a plan for installing the catchment structure was agreed upon and implemented.

The Project Coordinator at the time of the initial response, Cedar Creek Engineering, also implemented ground water sampling and analysis consisting of installing a number of monitoring wells within the bedrock strata as well as a number of temporary wells in the unconsolidated soils overlying the bedrock. The bedrock wells were sampled and indicated the presence of SPH in at least one well and elevated concentrations in several of the other wells. The shallow temporary wells were then installed within the unconsolidated soils overlying the bedrock near the shoreline of Flathead Lake. Sampling and analysis of those wells indicated the presence of sheen and high dissolved-phase concentrations in

a number of locations near the landscape ponds on the Arnold and Kohler properties. In mid-May, after a hard rainfall event, an additional free product seep appeared on an upland portion of the Jones property and additional mitigation was performed.

In late May EPI became the Project Coordinator. Upon review of the characterization data available at that time, it became clear that the extent of the release and subsequent impacts had not been sufficiently characterized to develop a comprehensive remedial strategy. In particular, there were not sufficient data regarding the location of the SPH, the migration mechanism for the SPH to the lakeshore and seeps, and the lateral distribution of dissolved-phase contaminants. EPI immediately implemented additional sampling and analysis at the site. This sampling and analysis consisted of the following:

- Assessment of the presence of SPH, thickness of unconsolidated soil, and depth to bedrock in 80 locations on the Arnold, Kohler, Jones, Sykes/Gates, and Rothwell properties. This sampling was performed using Laser-Induced Fluorescence (LIF) and a limited-access direct-push rig. Additional information on LIF technology is available at www.wcec.com.
- Contemporaneous sampling and analysis of all on-site monitoring wells.
- Contemporaneous discrete sampling of each seep and discharge location to Flathead Lake. These samples are currently being collected on a daily basis.
- Detailed sampling and analysis of the treatment system performance both at the inlet and outlet of the system and at intermediate points within the system. These data provide information on the contaminant load placed upon the various components and the efficiency of those components. Samples from the treatment system discharge are currently being collected on a daily basis.
- Fully quantitative analysis of indoor air quality at the Arnold, Kohler, Jones, Sykes/Gates, and Rothwell homes. This sampling was performed using Summa canisters with a 24-hour nozzle and included samples in the breathing zone on both the bottom floor and the next upper floor in each residence. Ambient air samples were also collected outside of the homes to assess background air quality during the same time interval that indoor air was being sampled.
- Sampling and analysis of water quality at the on-site drinking water well. These samples include water directly from the well, from the storage cistern, and from the pressure vessels. These samples are also being collected daily.

These data have been used to develop a conceptual site model, which forms the basis for the proposed interim remedial measures presented below. The data collection and analysis procedures are presented in greater detail below and will be presented in a comprehensive report at the end of the 2008 construction season when all pertinent data for the 2008 work have been collected and reviewed.

Conceptual Site Model

Lithologic Conditions

During investigation of the site a total of 10 monitoring wells (*i.e.*, MW-1 through MW-10) were drilled and installed into the underlying bedrock using air rotary drilling methods. An additional 18 temporary monitoring wells (*i.e.*, TMW-1 through TMW-13, P1 through P4, and PW-1) were installed in the unconsolidated colluvial soil overburden using hollow stem auger drilling methods. In addition those initial actions and investigation of the occurrence of SPH in soil was conducted using Laser-Induced Fluorescopy (LIF) methods with a track-mounted direct-push rig. These investigative actions have served to provide a very good characterization of the lithologic conditions at the site. During these drilling and exploration activities observations of soil and rock type were recorded as was the thickness of the overlying soil. All surface elevations and well elevations were surveyed to an absolute datum (*i.e.*, horizontal datum to the Montana Coordinate System NAD83, vertical datum to NAVD88). A detailed topographic survey of the site was performed by Morrison Maierle and is presented as Attachment A.

The site slopes from east to west at an average grade of about 18% from Highway 35 to the Flathead Lake lakeshore. The subsurface conditions generally consist of a thin veneer of topsoil atop native colluvial soils varying in thickness from 0.5 feet to 25 feet and overlying a fractured bedrock. The bedrock consists of mostly limestone interbedded with dolomite, dolomitic siltite, siltite, and argillite identified in geologic maps as the Helena formation. Where exposed immediately east of Highway 35, the bedrock has an apparent strike of about N55W and a dip of about 35 to 45 degrees. Fractures within the bedrock appear to be generally vertically oriented with a northeast-southwest and northwest-southeast Anderson-Coulomb fracture pattern indicating primarily north-south compressional forces. The local area is highly faulted and fractured.

Near and slightly upland of the lakeshore the unconsolidated sediments overlying the bedrock become lacustrine clays, silts and sands and are considerably less permeable than the upland colluvial sediments.

Figure 2 illustrates the surface elevation contours of the site and Figure 3 illustrates the elevation contours of the underlying bedrock. Comparing these two figures indicates that, with the exception of the northwest corner of the site (*i.e.*, LIF borings 22, 23, and 24), there are not major topographic differences between the soil surface and the bedrock surface of the site. In the northwest corner of the site, the bedrock dips to approximately 20 feet below grade whereas the remainder of the site, bedrock is at depths ranging from 2 feet to 8 feet below grade.

Figure 4 illustrates an interpretive cross-section along the general axis of the contaminant plume (discussed in greater detail below). Figure 4 illustrates the typical slope of the bedrock and site surface from east to west, the variability in soil overburden thickness, the change in soil type near the lakeshore, and the depth to ground water relative to the bedrock and soil.

Piezometric Conditions

As noted above a total of 28 permanent and temporary monitoring wells have been installed at the site. The surface elevation and casing elevation for each of these wells has been surveyed which allows for development of contours of the piezometric surface of the shallow ground water. Table 1 presents a summary of water level and survey elevation data. Figure 5 presents piezometric contours for June 9, 2008.

Ground water at the site is present under water table conditions with a hydraulic gradient of about 0.08 feet/foot in a generally west-northwesterly direction. In general, the apparent ground water flow direction mimics the local topography. Ground water is generally present within the bedrock at a depth of about 38 feet below grade near Highway 35 (i.e., MW-2) and becomes very shallow near the lakeshore where the lake level and the ground water level intersect. In several locations the water table is artesian and shallow wells have piezometric water levels that are above the ground surface. This is generally manifested in the various seeps located within about 10 to 20 feet of the lakeshore.

These artesian conditions are variable and appear to originate when the ground water within the bedrock encounters the relatively permeable colluvial soils and migrates toward the lakeshore. When this ground water encounters the less permeable lacustrine clays, those clays can act as a dam forcing a localized rise in the piezometric surface resulting in seeps.

Ground water migration within the bedrock is primarily along the secondary porosity resulting from the intersection of bedding plans and fractures. Secondary porosity flow can be relatively rapid with localized high rates of ground water flux within particularly permeable fracture materials. The effects of this secondary porosity flow on the fuel spill are discussed in greater detail below.

Distribution of SPH and Dissolved-Phase Impacts

In late May EPI implemented the LIF investigation with a round of contemporaneous ground water sampling and analysis for all monitoring wells. The LIF investigation utilizes a down-hole laser to induce fluorescence of non-polar petroleum hydrocarbons and then measures both the occurrence and level of fluorescence. These data are provided in real-time and allow for an iterative approach to investigation of the presence of SPH, where successive LIF sampling points are guided the results of prior locations. This approach provides a characterization of the occurrence and thickness of soils saturated, or nearly-saturated, with SPH. The occurrence of such soils likely indicates that location where SPH on ground water has intersected the overlying soils and indicates those soils that represent a source of hydrocarbon dissolution to shallow ground water and, potentially, surface water.

Figure 6 illustrates the distribution and thickness of SPH in shallow soils as indicated by the LIF survey. Table 2 summarizes the data collected during the LIF investigation. This SPH distribution correlates well with the area of greatest SPH seepage and the distribution of dissolved-phase compounds.

Some SPH appears to be located on the water table in locations upgradient of the lakeshore. SPH has been measured in well MW-4 at a maximum thickness of 0.04 feet on June 16, 2008 and several wells (i.e., MW-1, MW-8, and TW-11) contain gasoline-range petroleum hydrocarbon (GRPH) concentrations that approach or exceed the expected aqueous solubility of gasoline fuel. This indicates that SPH may be present in these areas or as localized areas of SPH within bedrock fractures is resulting in high dissolved-phase concentrations. The potential distribution of SPH on ground water upgradient of the lakeshore is a data gap in the current level of investigation.

Figures 7 and 8 illustrate the interpreted distribution of dissolved-phase GRPH and benzene in ground water. Table 3 summarizes the analytical results for the contemporaneous ground water samples collected at the site between June 7 and June 9, 2008, which form the basis for the interpretation in Figures 7 and 8. Figure 9 presents the GRPH distribution for July 2008, and Figure 10 and 11 present the benzene distribution for July and August 2008.

The path of migration for dissolved GRPH and benzene appears to be northwesterly nearest the spill and then more westerly nearer the lake, resulting in a westward curving plume. The distribution of these compounds indicates that the dissolved-phase plume is relatively large and of a high source strength, as indicated by concentrations in water nearing saturation. This distribution is consistent with the local geologic and hydrogeologic conditions, with the interpreted location of SPH in soil, and observed seep conditions. Over time concentrations nearest the source area have attenuated unusually rapidly, to the point where the highest concentrations are at some distance downgradient of the source area.

It is EPI's opinion that the current level of characterization of these compounds is sufficient to develop an effective interim remedial measure that is protective of surface and ground water quality. The distribution of impacts is fairly well characterized although some data gaps in the distribution do exist. Resolving those data gaps to a level consistent with the general requirements of a remedial investigation is discussed below in later sections of this document.

Two additional rounds of site investigation have been performed since the prior Final Work Plan submittal. These rounds of investigation included:

- LIF Correlation Sampling, and
- Waste Characterization Sampling.

The LIF correlation sampling was performed at the request of counsel for Arnold, Kohler, and Jones with the objective of confirming the presence of contamination within the targeted excavation area assessing the relationship between the LIF data and quantitative laboratory analytical data. The scope of work and approach for this sampling were negotiated with EPA.

The resulting data indicated that elevated concentrations exist in correlation with the LIF results and that interbedding of coarse- and fine-grained soils result in variable concentrations with depth. This

study was complicated by the fact that contaminant migration is on going and the correlation study was conducted three months after the LIF investigation.

The waste characterization sampling was performed with the objective of determining whether the soils at the site would require handling and disposal as a hazardous waste under the Resource Conservation and Recovery Act (RCRA) regulations or State of Montana Department of Environmental Quality (DEQ) regulations. The scope of work for this task was also negotiated with EPA.

The resulting data indicated that the soil within the area to be excavated did not exhibit the characteristics of a hazardous waste and could be handled as petroleum-contaminated soil.

The results of both of these additional rounds of site investigation have previously been provided to EPA. These investigative actions and their findings, and the conclusions supported by those findings, will be presented in full detail in the final Interim Remedial Action report prepared at the conclusion of this phase of remediation at the site.

Indoor Air Impacts

As noted above, the spill has resulted in impacts to indoor air quality at five homes at the site. These homes are the Arnold, Kohler, Jones, Sykes/Gates, and Rothwell homes. Shortly after the accident odors were detected in the homes and subsequent qualitative and semi-quantitative air monitoring were sufficient to determine that air quality within the homes had been affected to the point that the residents should be temporarily evacuated. Each of these five homes remains vacant.

On June 11, 2008 EPI implemented a program of fully quantitative indoor air sampling at each home. This sampling consisted of placing a Summa canister with a 24-hour nozzle on both the bottom floor and next upper floor of each home and placing two upwind background samples south of the southern most home. The homes were fully sealed for the full 24-hour period.

Each of the 12 Summa canisters was submitted for analysis by EPA Method TO-15 on a rush turnaround basis. These analytical results are summarized in Tables 4 through 8. It is understood that indoor air quality mitigation will be necessary and these data were intended to serve as a quantitative baseline of current conditions.

A variety of compounds were detected within each of the five homes. These included compounds most commonly associated with gasoline fuels such as benzene, toluene, ethylbenzene, xylenes, ethanol, and other aromatic and aliphatic hydrocarbons as well as a variety of compounds not associated with fuels. These non-fuel related compounds included compounds such as tetrahydrofuran, styrene, 1,1,1-trichloroethane and other chlorinated and brominated compounds as well as some compounds within the background air samples (*i.e.*, chloromethane).

These non-fuel related compounds are commonly associated with consumer products and do not relate to the fuel spill. In houses that have been sealed for a period of time these non-fuel related compounds

can be off-gassed from carpets and padding, mattresses, plastics, and even small quantities of household cleaners. For example, the presence of freon in samples may indicate a refrigeration leak and acetone in samples may be associated with stain removers.

Of the affected homes, the highest concentrations were observed in the Arnold and Kohler residences, with lesser concentrations in the Jones and Sykes homes. The Rothwell home was the least impacted but still contained concentrations of fuel related compounds that indicates some level of vapor migration into that home.

Table 9 contains a comparison of potentially applicable indoor air cleanup levels for those fuel-related compounds that were both detected in the air sample noted above and for which cleanup levels exist. These cleanup levels are based upon a residential exposure model, which, among other things, assumes a 24-hour/day and 365 day/year exposure and includes juvenile exposures. Where applicable, the carcinogenic (*i.e.*, lower) cleanup level has been presented (*e.g.*, benzene).

Cleanup levels for known or suspected carcinogens, are based on an excess cancer risk of 1 in 1,000,000. That is to say, exposure to those concentrations, over a 30-year period, 24-hours/day, 365 days/year by a 70 kilogram individual at a normal breathing rate may result in cancer in 1 in 1,000,000 persons. This is compared to the nominal cancer rate for any given US citizen of 1 in 4. Cleanup levels for non-carcinogenic compounds are based upon a health risk or calculated Hazard Quotient of 1.0.

It is EPI's understanding that on sites where the Montana Department of Environmental Quality (MDEQ) is the lead regulatory agency the cleanup levels presented by the EPA Office of Solid Waste and Emergency Response (OSWER) are the default cleanup levels. However, the EPA Region 9 Preliminary Remediation Goals (PRGs) are also sometimes used. These values differ only slightly and the OSWER values are generally the more restrictive. Neither the National Institutes of Occupation Safety and Health (NIOSH) nor the Occupational Safety and Health Administration (OSHA) values are considered applicable at this site since those have been developed for an occupational/worker exposure and not a residential exposure.

Comparing the available data to the available air cleanup levels confirms prior knowledge that vapor mitigation is required at each of these five homes. Unless advised differently by EPA, EPI will evaluate the effectiveness of vapor mitigation efforts against the OSWER values.

Contaminant Migration Pathway and Mechanisms

Based upon the available data it is possible to develop a conceptual model of contaminant migration that is fully consistent with the observed conditions. As additional data are collected it may be appropriate to modify and refine this conceptual model.

On April 2, 2008 a single vehicle accident on Highway 35 resulted in the rapid release of about 6,300 gallons of gasoline fuel to a drainage ditch on the west side of the highway. The released fuel migrated

laterally as surface flow in the ditch and infiltrated vertically into the soil and underlying bedrock. Vertical migration was fairly rapid and no liquid fuels were recovered at the spill site.

After infiltrating through the soils the fuel entered the secondary porosity of the underlying bedrock. The data suggest that initially the fuel migrated on a vector along strike and dip of the bedrock as well as vertically onto the underlying ground water. This resulted in the northwesterly contaminant migration observed in the portion of the dissolved-phase plume nearest the highway. It is possible that there may have been a contributory effect on dissolved-phase flow from the general cone of depression formed by the water supply well. However, this well pumps only intermittently and does not have a strong and consistent effect on the local piezometric conditions. Further characterization will include an assessment of pumping at the drinking well on local piezometric conditions.

Any SPH that migrated vertically through the bedrock encountered ground water and likely formed a layer of SPH on the water table. This layer of SPH would then have migrated downgradient toward the lakeshore.

At a location upland of the lakeshore the water table intersects the soil overburden. Soils have a primary porosity and permeability that provides some amount of storage and saturation of SPH that does not generally exist within the bedrock. These SPH-saturated soils are those that are identified on Figure 6 and which were detected during the LIF investigation.

As SPH migrated more slowly downgradient through the soil matrix it encountered the less permeable lacustrine clays near the lakeshore. These clays served as a barrier to additional horizontal flow and resulted in the SPH migrating toward natural ground water seeps. These seeps present as landscape features on the Arnold and Kohler properties and as seeps to the lake. Immediately after a large rain event and an associated short-term rise in water level these seeps and SPH can also become artesian as was observed on the Jones property.

In the relatively short period of time since the release it is not expected that the dissolved-phase of the contaminant plume has reached a steady-state lateral distribution. This is suggested by the changes in lateral distribution of the dissolved-phase plume observed in the monthly ground water sampling data. It is suspected that as the dissolved-phases migrate downgradient toward the lakeshore the "dam" effect of the lacustrine clays may result in a broadening to the north and/or south of the dissolved-phase impacts.

Vapor migration into the five residences is primarily vertical through the bedrock fractures and unconsolidated soil overburden. Vapor concentrations within air in the unsaturated fractures of the bedrock likely contain high vapor concentrations of fuel hydrocarbons. As water levels rise and fall it results in a "pumping" action of the air above the water table. When water levels rise after a storm event or during a thaw soil gases are forced upward and can enter the homes. Similarly, atmospheric pumping can occur in response to changes in barometric pressure. The barometric pressure within the soil and rock represents an average barometric pressure. When a low pressure system moves over the site the higher pressure in the soils/bedrock relative to the air can result in upward migration of vapors.

If there are cracks in floors or uncovered crawl spaces fuel vapors can readily migrate into home. This is also the case if the inside of the home has a lower pressure, due to heating ventilation and air conditioning (HVAC), relative to the soil/bedrock pressures.

Scope of Work

The scope of work presented below for Phase 1 of the Interim Remedial Action at the site is focused on meeting the following objectives:

- Continue operation, maintenance, and compliance sampling of the existing seep water collection system until a more permanent system can be installed.
- Continue sampling and analysis of the on-site water supply system to assess and confirm continued compliance of drinking water with applicable standards.
- Implement an interim remedial action to protect, on a more sustainable basis, water quality in Flathead Lake.
- Implement indoor air vapor mitigation at the five affected homes.
- Assess temporal changes in the distribution of SPH and dissolved-phase constituents until additional ground water remediation can be performed.
- Continue to perform remedial investigation actions necessary to fill existing data gaps and characterize the extent of SPH and dissolved-phase impacts.

The scope of work in Phase 1 is focused on environmental protection of Flathead Lake and mitigation of human exposures inside the affected homes. Additional investigative actions will be initiated when time and site conditions allow, but no later than Spring of 2009.

The objectives presented above will be met using the following scope of work.

Operation, Maintenance, and Compliance Sampling

Operation, maintenance, and compliance sampling of the current temporary treatment system has been ongoing since the system was installed. EPI has continued this sampling. In addition, assessment of system performance has indicated that several upgrades were necessary to the system. These upgrades have been performed.

As an example of an implemented upgrade, the system functions with both air sparging as primary treatment and GAC adsorption as secondary treatment prior to discharge. An assessment of the treatment system indicated that, as configured in early June, very little treatment was occurring in the

primary air sparging cell. This resulted in excessive dissolved-phase concentrations being sent to the secondary treatment and placing an overly large treatment burden on the GAC.

In response to this finding the primary treatment chamber has been upgraded to increase residence time, increase air sparging airflow, and to improve the distribution of air/bubbles throughout the treatment chamber. This was done by adding a larger treatment chamber, placing weirs inside the chamber, placing a number of horizontal air diffusers inside the chamber, and doubling the airflow. These actions were necessary to maintain compliance with surface water discharge criteria at the system effluent. The primary regulatory standard for discharge contained within the Order is 2.2 µg/L of benzene. The system discharge is sampled daily and is currently submitted for analysis using EPA Method 602.

Sampling and analysis of the system effluent are currently performed using EPA Method 602 on a once per week basis with those analyses also being performed on a 24-hour turnaround basis. This is based on directive by the OSC. At the direction of EPA samples have also been collected of taps at the Arnold, Kohler, and Jones residences. These samples were collected from exterior taps to address EPA's concern that the supply system has the potential to be impacted by environmental conditions along the supply piping alignment rather than only from the supply well. Samples were collected from exterior taps at each home after purging about 4 gallons of water from the tap. This volume of water equated to about 50 percent of the estimated volume of water within the supply piping. These samples were placed directly into laboratory-supplied containers and were submitted to an accredited laboratory for analysis using EPA Methods 524.2 and 525.

Environmental compliance sampling will be conducted on a monthly basis to assess exposure to the lake that may not originate from the system discharge but which may originate from unknown/undiscovered seeps. Six surface water grab samples will be collected on a monthly basis from locations 6 feet outboard of the high water line at the time of sampling, at the mid point of the water column. For safety reasons these samples are typically collected from the existing docks. In addition, three surface water grab samples will be collected at locations less than 10 feet outboard of seep N143. These sampling locations are indicated on Figure 12.

Surface water samples are submitted for BTEX analysis by EPA Method 602 under 3 day turnaround. Samples are not collected at a time when there is active boat fueling at an upwind dock or operation of gasoline powered watercraft near or upwind of the sampling locations. In such situations, sampling is delayed until a sufficient amount of time, at least 60 minutes, after such activities had been ceased.

Ongoing Sampling and Analysis

Table 10 summarizes the current level of ongoing and routine sampling and analysis at the site. This program of sampling and analysis has been revised from prior versions of the work plan and is based upon current feedback and direction from EPA.

In general, this revised sampling schedule includes the following:

- **Permanent and Temporary Monitoring wells;** Monthly sampling with 5-day turnaround. Analysis using EPA Method 8021B for BTEX and NWTPH-Gx for total petroleum hydrocarbons. It is acknowledged that the site is significantly impacted and ongoing sampling is for the purposes of characterization not demonstrating compliance. As such, these less expensive yet still highly precise and accurate methods with low detection limits will provide the data necessary.
- **Seeps;** Weekly sampling with analysis by EPA Method 602 for BTEX and 24-hour turnaround.
- **Treatment System Effluent;** Sampling conducted three times a week on Monday, Wednesday, and Friday for BTEX using EPA Method 602. Analyses will be performed on a "rush" 24-hour basis. Once compliance has been consistently established for 4 weeks, sampling and analysis can be reduced to a once per week basis with those analyses also being performed on a 24-hour turnaround basis.
- **Surface Water;** Weekly collection of six surface water grab samples from locations 6 feet outboard of the high water line at the time of sampling, at the mid point of the water column. Surface water samples would be submitted for analysis by EPA Method 602 under 3 day turnaround. Samples would not be collected at a time when there is active boat fueling at an upwind dock or operation of gasoline powered watercraft near or upwind of the sampling locations. Sampling would be delayed until a sufficient amount of time, at least 60 minutes, after such activities had been ceased. In addition, three surface water samples will be collected from locations within 10 feet outboard of seep N143. Surface water locations are indicated on Figure 12.
- **Water Supply Well;** The water supply well and system and MW-2 are sampled on a monthly basis. All analyses are run on a standard 5-day turnaround basis and analysis are performed using EPA Method 524.2 for VOC analysis. The homeowners association has requested that EPI cease sampling the open cistern.

It is EPI's opinion that this sampling protocol provides the level of environmental protection and monitoring appropriate for the site while controlling excessive laboratory costs.

Interim Remedial Actions

It must be acknowledged that in order to implement any active remedial action at the site it will be necessary to obtain permission from the landowners to perform this work. It is EPI's understanding that Keller Transport is nearing agreement with the Landowners on access agreements.

Based upon EPA's directives the interim remedial action will consist of three primary components. These include design and installation of a ground water interceptor trench, mass extraction of highly impacted soils, and design and installation and operation of a treatment system for the collected liquids.

- **Interceptor Trench Installation.** Installation of a ground water interceptor trench is proposed along the general alignment indicated on Figure 12. The actual design alignment of the interceptor trench is presented in the enclosed design drawings included in Attachment B. This alignment has been agreed upon by the OSC and both EPI and EPA feel this alignment is best-suited to site conditions. This interceptor trench will be installed near the contact between the colluvial sediments and the lacustrine clays. The purpose of the interceptor trench is to capture impacted ground water and SPH as it migrates out of the bedrock and into the colluvial sediments and prior to entering the lake.

The interceptor trench would be constructed in 6 discrete segments. Each segment would drain a separate portion of the trench. Each portion of the trench would be separated by a bentonite clay dam to eliminate, to the extent practicable, hydraulic communication along the trench. Attachment B presents detailed design drawings for the interceptor trench.

Trench segmentation is necessary to assess which portions of the trench are collecting the most contaminated water and, as the impacts are eventually remediated, to allow different portion of the interceptor to be shut off. If, for example, sampling and analysis indicate that Segment 6 does not contain water that exceeds a regulatory criterion, that segment can be shut off using assigned valves and the load on the treatment system can be reduced and costs can be controlled. This also allows the operation of the trench to be focused on those areas with the highest contaminant concentrations and most protective and effective capture.

The depth of the interceptor trench will be about 5 to 6 feet below the seasonal low water table, or to bedrock, whichever ever comes first. The depth to bedrock in the area of the proposed trench is variable and may be as deep as 20 feet or more. Due to the location adjacent to the lakeshore it will not be possible to excavate to such depths without sloped sidewalls and such sloped sidewalls will encroach on the lakeshore or some homes. An interceptor trench depth of about 5 to 6 feet below the seasonal low water table will be sufficient to effect hydraulic capture of dissolved-phase and separate-phase contaminants. The pressurized trench piping will be routed to treatment system.

The interceptor trench will include a provision for compliance sampling to confirm the effectiveness of the trench at capturing impacted ground water. EPI proposes a total of seven such monitoring points which would consist of either newly installed wells or converting some of the existing temporary monitoring wells to more permanent installations. Monitoring at these locations would assess the post-remedial impacts between the trench and the lakeshore as an indicator of the trench effectiveness. Interceptor trench compliance sampling wells are indicated on Figure 12. These wells will be sampled on a monthly basis using EPA Method 8021B to quantify benzene, toluene, ethylbenzene, and total xylenes concentrations.

- **Treatment System.** The planned location for the treatment system is indicated on Figure 12. This area is on community property owned by the East Bay Homeowners Association and does

not contain other structures. It is readily accessible for equipment and vehicles and has access to power. This location is the least disruptive to sensitive environments and has a minimal effect on the homeowners. Construction of the building will be aesthetically consistent with the requirement of the East Bay Homeowners Association and may include visual barriers such as landscape trees and muted colors. The location and grading required for the planned treatment system building is included in the design plans included in Attachment B.

Due to the amount of equipment necessary and the anticipated flow it is likely that the treatment compound will need to be relatively large. It is currently anticipated that the building will be about 2,400 square feet in size and will require a 16-foot high clear span ceiling. It is anticipated that the building will be constructed of poured concrete walls and will be recessed into the hillside. The ceiling will likely be steel trusses with a raised seam metal roof at a minimum 1/12 pitch. Construction of the building will require a local building permit and must comply with local building codes.

The building will have a monolithic foundation that will be sloped to a floor drain and sump with internal pump controlled by a float switch. The float switch will also be connected to the system control and notification logic. In the event of a high rate leak/release, the monolithic foundation will serve as a secondary containment capable of storing up to about 18,000 gallons of water. The floor drain and sump will be connected to a discharge pipe that routes back to the holding tank.

The building will be equipped with a diesel-powered generator as an alternate power source for the treatment system during periodic power outages, typically experienced in the winter months. The building will also be equipped with an alarm system in the event of system failure. The alarm system will be connected to a telemetry system that will notify local responders of a major system failure.

The ground water captured by the interceptor trench will be routed to the treatment system under pressure. The water will be pumped to the treatment system in a 6-inch PVC pipe. This pipe will daylight inside the building to prevent the potential for freezing in the winter.

The treatment system will consist of primary treatment using a settlement/holding/surge tank followed by air sparging and secondary treatment using GAC. GAC is the preferred method due to simplicity and cost of operation. However, if concentrations are excessively high and large GAC units are necessary to achieve the necessary treatment it may be necessary to use a different secondary treatment technology. Attachment C presents a treatment system schematic and process and instrumentation diagrams (P&ID).

Treated water will be discharged to Flathead Lake under an NPDES permit. Treated water will be gravity drained an outfall slightly upscore of the lake. The outfall will be armored to prevent erosion. This approach has been approved by representatives of the Confederated Salish and Kootenai Tribes (CSKT).

Some of the specific details of the treatment system cannot be fully designed at this time due to unavoidable uncertainties and may require revisions. However, the approach and concept presented above are wholly applicable to the site and can be implemented and effective at attaining the desired objectives.

EPI proposes that, if approved, the project would proceed with interceptor trench installation and concurrent refinement of the treatment system design. Once installed, the influent rates and concentrations from the interceptor trench would be tested. At each step in this process, EPA would be provided with the available information in both formal deliverables and within the monthly status reports required by the Order. In the absence of such an accelerated approach it does not appear possible to complete the design, installation, testing, and start-up of the necessary system components by the seasonal deadline. Due to the late start of this project, it may be necessary to shut-down the existing temporary system before this permanent system is fully operational.

- **Mass Excavation.** Mass Excavation will be performed concurrently with Interceptor Trench installation.

As noted above there is an area of the site where a large quantity of SPH has become sorbed to the soil matrix. These soils are essentially saturated with SPH and will act as a longer-term source of hydrocarbon dissolution to ground water, and as a source of vapor to air, if not removed or remediated. It has been estimated that these soils contain the equivalent of about 3,050 gallons of gasoline fuel.

These impacted soils are relatively shallow and readily accessible. EPI proposes mass excavation to immediately and permanently remediate these impacts. Mass excavation is highly effective, readily implemented, and its effectiveness can be clearly demonstrated through the use of sampling and analysis at the limits of the remedial excavation.

Mass excavation would be conducted using standard track- or tire-mounted excavators. The area of impacts is readily accessible to such equipment and excavated material can be directly loaded into single trucks or truck and transfer boxes for off-site treatment/disposal.

The estimated maximum extent of mass excavation is indicated on Figure 12. This area consists of the extent of SPH-saturated soils and those soils extending to the interceptor trench, which is discussed in additional detail below. Based upon our current understanding of local soil and bedrock occurrence the excavation would be as deep as 8 to 10 feet below grade to the north and west and about 3 to 4 feet below grade to the south and east. Excavation of this area would significantly impact the Arnold, Kohler, and Jones yards and would result in the demolition and removal of most of their backyard landscaping. This landscaping would be replaced with like kind to the satisfaction of the homeowners or the homeowners would be provided with a landscaping allowance.

The remedial excavation would be guided by field screening using a photoionization detector (PID), and olfactory and visual indications of the presence of contamination. The final limits of the remedial excavation would be guided by a combination of the results of laboratory analysis. The limits of reasonable practicability and Land Owner preferences. The limits of excavation will be determined in consultation with the OSC. The OSC's field decisions and recommendations while reached in a cooperative manner with EPI, are considered directives under The Order and will be followed if possible. OSC field directives will be noted and recorded in daily field notes.

Performance sampling from the final limits of the remedial excavation would be collected at a frequency of one for every 20 linear feet of sidewall shallower than 2 feet deep, an additional sample for every 20 linear feet of sidewall between the 2 and 10-foot depth, an additional sample for every 20 linear feet of sidewall at a depth greater than 10 feet, and one sample for every 200 square feet of excavation bottom, assuming the excavation bottom is above the water table and/or bedrock surface at the time of excavation. If the limits of excavation cannot be expanded any farther due to practicability issues (e.g., building and foundation, slopes, excessive sloughing, bedrock), soil conditions at the final limits of the mass excavation will be documented using the sampling frequency indicated above. During initial sample collection soil samples will be analyzed for BTEX using EPA Method 8021B since benzene is likely to be the regulatory driver for remedial excavation.

Upon attainment of the final limits of mass excavation, the excavation will be backfilled. The backfill material will consist of a relatively porous self-compacting material such as pea gravel within about the bottom two feet of the excavation area. A layer of woven geotextile will be placed on top of the pea gravel fill. Compacted structural fill will be placed to within one foot of the finished surface. Approximately 12 inches of topsoil will be placed during landscaping.

It should be noted that EPI submitted a Draft Aquatic Lands Conservation Ordinance (ALCO) 87(a) permit application to the Natural Resources Department of the CSKT. According to Mr. Mike Durglo of the CSKT, the proposed work (both trenching and mass excavation) is not a project based on the Tribal ALCO 87(a) and will not require any further permitting with the Tribe. EPI has also filed a Nationwide 38 application with the Army Corp. of Engineers. According to Ms. Jean Ramer, approval of that permit is pending.

Indoor Air Vapor Mitigation

Indoor air vapor mitigation is proposed for the Arnold, Kohler, Jones, Sykes, and Rothwell homes. The mitigation system will have two components. The primary component will be an underslab or below floor vacuum extraction system and the second component will be a house pressurization system. Both components are designed to work in concert to maintain a positive pressure within the home relative to the subsurface.

The underslab vacuum extraction system will consist of a network of horizontal pipes placed below grade beneath the footprint of the home. At the Arnold home this system will be placed in the crawlspace beneath the downstairs. The piping would be placed in bedding and cover of pea gravel and the pea gravel would be covered with a heavy plastic sheeting with sealed seams and would be sealed to the walls. All of the utility and mechanical penetrations would also be sealed.

At the remaining houses the underslab system will require cutting through the floor slab, trenching about a foot into the underlying material, placing 4 inches of bedding material, laying the perforated piping, covering that piping with bedding and the replacing the concrete to match the original floor. The entire floor would then be sealed with an epoxy sealant and expansion or cold joints at the walls would be sealed with a flexible grout. The basement would then be restored.

In all cases the piping will be routed to an in-line vacuum blower that will create a mild vacuum beneath the floors. The horizontal piping will also exert a larger area of influence than a single, or even multiple, vertical pipes and is more likely to affect the entire area beneath the footprint of the house. The vacuum blower piping will be routed to the roof along the exterior of the house and vented. The vent stack will follow the same local regulations for height and distance from the roof peak as chimneys and HVAC exhaust stacks. The exterior piping will be framed and boxed in to match the existing house architecture with an access panel to service the blower and to collect vent stack air samples.

In addition to the underslab venting systems the Arnold, Kohler, Jones and Sykes/Gates homes will be equipped with a heat recovery ventilator (HRV). The Rothwell's have at this time declined the installation of an HRV until after additional indoor air sampling. If the indoor air sampling after installation of the underslab venting system at the Rothwell's indicates that indoor air quality is not yet in compliance with cleanup levels, then an HRV system will be installed. This approach is appropriate to the Rothwell home since it is the least impacted of the residences.

The HRV is a air-to-air heat exchanger that draws in outside air and warms that air to the temperature of the indoor air. The outside air being brought in displaces the interior air, which is vented outside. The net effect of an HRV is to place a mild positive pressure inside the home relative to the outside and also relative to the conditions beneath the slab. This increases the pressure differential above the slab relative to below the slab and further limits the potential for vapors to migrate into the home. This system will be particularly important in the winter when the homes are generally sealed to the outside.

The parameters for installation of these systems have been negotiated with each homeowner. Attachment D presents the specific home plans and installation summary negotiated with each homeowner. Installation of the vapor mitigation system in the Rothwell home is underway.

Upon completion of installation and testing of the underslab venting system and the HRV and necessary cleaning of the homes the indoor air quality will again be tested. The testing will consist of placing 24-hour Summa canisters within a sealed home. As with the baseline sampling there will be a Summa canister on the bottom floor and the next floor above. There will also be four background samples. These samples will be located to on the vacant lot south of the Rothwell home, near the site

entrance east of the Sykes home, just north of the supply well pumphouse in the location of the proposed treatment compound and west of the properties on the Jones dock.

Each of the Summa canisters will be submitted for rush analysis by EPA Method TO-15. Those data will be compared against the OSWER indoor air cleanup levels summarized in Table 9.

These houses will then remain closed and sealed for an additional 7 days and the same testing protocol discussed above will be repeated. If analytical data for each round of sampling indicate that indoor air quality is in compliance with the OSWER cleanup levels for fuel-related compounds then the homes will be deemed suitable for re-habitation. If indoor air quality is not in compliance with the applicable regulations additional appropriate actions will be evaluated.

Performing this work requires negotiation of an access agreement with each of the homeowners and actual permission from the homeowners to proceed. Counsel for Keller is in the process of negotiating these agreements. This work will proceed as expeditiously as possible but cannot begin without ultimate homeowner approval.

Water Supply Protection

The water supply well and system has previously been sampled on a daily (*i.e.*, Monday through Friday) basis with 24-hour turnaround laboratory analysis. On September 25, 2008, the OSC directed Keller to start collecting samples monthly, rather than daily. Samples will therefore be collected on a monthly basis (during the third week of each month) with a 5-day turnaround laboratory analysis.

If petroleum hydrocarbons are detected at concentrations of 50 percent or greater of the regulatory drinking water standard, in any water supply sample, this result will be confirmed using daily sampling and analysis with 24-hour turn. If confirmed, the residents served by the system will be provided with bottled water for consumption and will be directed to limit their use of water for bathing and showering.

If detected petroleum hydrocarbons in the supply well trigger the need to supply water to the residents EPI will notify the EPA and other agencies immediately and will evaluate additional appropriate actions.

Additional Site Characterization

While the site is sufficiently characterized to allow selection of an interim action, it has not been sufficiently characterized to consider the remedial investigation completed or to develop a remedial alternative for addressing the dissolved-phase impacts present on the upland portion of the site. The following data gaps exist:

- Characterization of the northernmost portions of the dissolved-phase plume north of the Arnold property.

- Characterization of the northern, southern, and eastern portion of the plume east of Highway 35.
- Characterization of ground water impacts in the bedrock materials just northwest of the Rothwell home.
- Additional assessment of the presence of SPH on the ground water along the apparent axis of migration of the dissolved-phase plume.
- Hydraulic and pneumatic properties of the bedrock water table aquifer. These would include hydraulic permeability, isotropic/anisotropic flow, storage, and vacuum radius of influence. It will be necessary to understand these properties and others in order to evaluate and design a remedial method for treating the dissolved-phase contaminant plume.

It is not reasonably possible to fill all of these data gaps within the remainder of this field season and still meet the objectives of installing the more permanent treatment system and vapor mitigation systems. It is also acknowledged that these investigative actions are best performed in an iterative fashion with successive phases building on the prior phases of investigation.

In the remainder of 2008 this *Revised Final Work Plan* proposes to implement the following:

- Installation of two monitoring wells (*i.e.*, MW-11 and MW-12) north of the Arnold property.
- Installation of a monitoring well north (*i.e.*, MW-13) and south (*i.e.*, MW-14) of MW-1 to assess the potential northern and southern extent of the dissolved-phase plume east of Highway 35.
- Installation of two monitoring wells (*i.e.*, MW-15 and MW-16) along the axis of the dissolved-phase plume.
- Installation of three monitoring wells (*i.e.*, MW-17, MW-18, and MW-19) up gradient from the lakeside trench.
- Installation of five monitoring wells (*i.e.*, MW-20, MW-21, MW-22, MW-23, and MW-24) down gradient of the lakeside trench.
- Conversion of three temporary wells into permanent monitoring wells (indicated on Figure 12).

After completion of new wells/temporary well conversion, the resulting well configuration is such that at least one well will be placed up- and down-gradient of each individual interceptor trench segment. The locations of each of these wells are indicated on Figure 12.

Each of these monitoring wells will be completed within the bedrock water table. Wells will be drilled using air rotary drilling methods. Each well will be completed with 2-inch diameter PVC casing and

0.010-inch factory machine slotted well screen. The wells will be completed at a depth of about 15 feet below the water table at the time of drilling. The wells screens will extend from about 5 feet above to about 15 feet below the water table at the time of drilling to allow the wells screen to intersect the unsaturated/saturated interface throughout normal temporal changes in water level. Each will have a sand filter pack that extends about 3 feet above the screened interval and a bentonite grout seal to within 3 feet of the surface. The surface seal will consist of concrete and a flush-mounted traffic rated well box. In the event that a flush mounted monument is not appropriate an above grade completion with a locking lid will be installed. All well drilling and construction will be performed under the supervision of a Montana-licensed well driller and a professional geologist or engineer. All well installation shall be in accordance with applicable regulations for installation of resource protection wells.

Based upon the data resulting from the installation and sampling and analysis of these new wells it may be necessary to perform additional investigation and testing. It is currently anticipated that, at a minimum, the following actions may be performed starting in the spring of 2009:

- Installation of pneumatic and hydraulic monitoring wells near MW-4 and pilot testing of remedial technologies using MW-4 (if applicable) as an extraction well. Pilot testing will likely include dual-phase extraction, ground water pumping, air sparging, and soil vapor extraction. Based upon the site conditions each of these technologies may be applicable and each has its potential advantages and disadvantages depending upon actual conditions. Pilot testing would be performed to determine which remedial technology is the most practicable and most likely to be effective.
- Installation of additional monitoring wells. It is currently anticipated based upon the available data that one to two wells will be needed east of well MW-1 to characterize the eastward extent of the dissolved-phase plume for upgradient control. The current conceptual model indicates that fuel flow immediately after the spill was governed by the structure of the bedrock and fractures within the bedrock. This condition suggests the possibility that there was an eastward component of flow. The GRPH and benzene concentrations consistently observed at MW-1 indicate that SPH did encounter ground water in this area and additional data are necessary to characterize with other areas are impacted.
- Design and implementation of a suitable remedial system to more adequately address dissolved-phase impacts at the site.
- Performance of a tracer test to assess ground water flow paths, rates, and dilution. This tracer test would involve placing a volume of dilute tracer, such as sodium bromide, at 6% into MW-1 and then monitoring the downgradient migration of bromide in concentrations.

Based upon the data collected it may become necessary to perform other actions. Such potential actions will be evaluated as this project progresses.

During interceptor trench installation and mass excavation it will be necessary to decommission a total of 11 temporary wells (i.e., PW1, P1, P2, P3, P4, TW1, TW2, TW10, TW11, TW12, and TW13). Two of these wells (i.e., TW2 and TW11) will be replaced by permanent monitoring wells. Wells TW8 and TW9 have previously been decommissioned because of poor completion and wells seals. The data provided by these wells will be replaced by new monitoring well MW-24. All well decommissioning will be performed by a licensed and qualified well-driller and all appropriate permits and notifications will be filed.

Schedule

By necessity, significant work at the site is ongoing. The treatment system is being operated and maintained and routine monitoring is ongoing. The following presents key schedule start dates for the work propose herein:

- Interceptor Trench Design and Mass Excavation Plan; Complete
- Treatment Compound and Treatment System Design; Complete
- Order and acquire Treatment Equipment; Complete
- NPDES Permitting for Treatment System; Complete
- Wetlands Delineation – September 3, 2008
- Army Corp of Engineers Nationwide 38 Permit application submittal – September 9, 2008
- Approved Army Corp of Engineers Permit - Pending
- Begin installation of VCS system (Rothwell) – September 15, 2008
- Secured site access; variable
 - Arnold – Pending
 - Kohler – C (October 1, 2008)
 - Jones – C (October 1, 2008)
 - Gates/Sykes – Pending
 - Homeowners Association (HOA) – C (October 1, 2008)
- *Revised Final Work Plan*; October 2
- Initial Mass Excavation and Interceptor Trench construction; October 8
- Complete Permitting for Treatment Compound: October 15
- Complete Mass Excavation and Interceptor Trench; November 1
- Initial Treatment Compound Construction; November 15
- Installation of Treatment System; November 30
- Startup and Testing of Treatment System; December 15
- Shutdown of Temporary Treatment System; December 17 (weather dependent)
- Demolition of Catchment Structures and Removal of Temporary System; December 19

This schedule also includes, by reference, the schedule for monthly status reports due to EPA. Those status reports are due on, or about, the 11th of each month.

As expressed earlier, there is an aggressive and compressed schedule for this project and meeting the above schedule depends upon many things going well. These include approval of access from the

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homeowners as well as timely approval from the various agencies that have regulatory authority. Keller and EPI will make all best efforts to meet the schedule presented above. Keller and EPI will sincerely appreciate EPA's assistance in meeting this schedule and any flexibility and latitude EPA may be able to provide.

Closing

If after reviewing this *Revised Final Work Plan* you have any questions or need additional information, please feel free to call me at (425) 395-0030. We look forward to your response.

Sincerely,

Thomas C. Morin, L.G.
President and Principal Geologist

Mr. Eric Koltes, L.G.
Senior Geologist

cc: Mr. Mark Yavinsky; ACE Westchester Specialty Group
Mr. Charles Hansberry; Counsel for Keller Transport
Mr. Thomas Jones; Counsel for ACE Westchester
Mr. Ron Kohler; President, East Bay Homeowners Association
Mr. Mike Durglo; Confederate Salish and Kootenai Tribes
Mr. Steve Stanley; Lake County, Office of Emergency Management

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Figure 12 – Proposed Interim Actions and Proposed Additional Sampling Locations

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Attachments

Attachment A – Topographic Site Survey

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Attachment D –Home Specific Vapor Mitigation Plans

Tables

Table 1
Summary of Ground Water Elevation Data
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

Sample Location	Date	Easting ^(a)	Northing ^(a)	Casing Elevation ^(b)	Depth to Water	Water Elevation
MW-1	6/6/08	850672.2	1295502.4	2959.2	21.56	2937.6
MW-2	6/6/08	850686.5	1295757.3	2950.6	38.88	2911.7
MW-3	6/6/08	850585.4	1295469.9	2959.5	22.77	2936.7
MW-4	6/6/08	850535.0	1295799.8	2922.7	19.00	2903.7
MW-5	6/6/08	850453.1	1295402.0	2926.7	19.90	2906.8
MW-6	6/6/08	850510.7	1295589.1	2925.7	19.92	2905.8
MW-7	6/6/08	850492.9	1295907.8	2906.3	3.85	2902.5
MW-8	6/6/08	850532.3	1295672.6	2927.8	22.74	2905.1
MW9	6/6/08	850489.1	1295292.6	2939.3	26.86	2912.4
MW-10	6/6/08	850449.7	1295513.6	2918.5	14.29	2904.2
TW-1	6/6/08	850358.5	1295692.3	2898.9	3.18	2895.7
TW-2	6/6/08	850414.6	1295708.6	2905.8	7.21	2898.6
TW-3	6/6/08	850355.3	1295625.2	2898.9	4.02	2894.8
TW-4	6/6/08	850388.7	1295600.1	2902.2	3.97	2898.2
TW-5	6/6/08	850326.1	1295956.7	2899.3	4.56	2894.8
TW-6	6/6/08	850466.5	1296008.8	2901.6	2.35	2899.2
TW-7	6/6/08	850416.7	1295943.8	2900.3	1.90	2898.4
TW-8	6/6/08	850354.3	1295536.4	2899.4	NA	NA
TW-9	6/6/08	850373.9	1295536.9	2901.5	1.78	2899.8
TW-10	6/6/08	850402.1	1295696.6	2902.1	3.03	2899.1
TW-11	6/6/08	850370.0	1295746.3	2898.7	1.80	2896.9
TW-12	6/6/08	850357.5	1295844.4	2898.8	3.22	2895.6
TW-13	6/6/08	850349.9	1295806.5	2898.9	3.23	2895.6
P-1	6/6/08	850359.7	1295784.2	2899.0	4.09	2894.9
P-2	6/6/08	850368.1	1295781.3	2899.4	2.33	2897.1

Notes:

(a) Horizontal Datum - Montana Coordinate System NAD83, Single Zone

(b) Vertical Datum - NAVD 88

Table 2
Summarv of LIF^(a) Survey Data
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

LIF Boring Location	Easting ^(b)	Northing ^(b)	Surface Elevation ^(c)	Depth to Bedrock (bgs ^(d))	Bedrock Elevation ^(c)	Product Noted	Product Start Depth (bgs)	Product End Depth (bgs)	Product Thickness (feet)
1	850383.3	1295728.6	2898.7	13.28	2885.4	Y	1.6	2.6	1.0
2	850396.1	1295745.2	2899.8	10.79	2889.0	N	-	-	0.0
3	850404.6	1295728.0	2901.6	9.92	2891.7	Y	3.5	8.2	4.7
4	850420.2	1295730.1	2904.6	6.88	2897.8	Y	6.0	6.9	0.9
5	850428.5	1295706.1	2907.2	6.35	2900.9	N	-	-	0.0
6	850415.6	1295693.4	2902.6	7.09	2895.5	N	-	-	0.0
7	850400.8	1295705.0	2900.1	7.99	2892.1	Y	2.0	3.0	1.0
8	850370.6	1295707.6	2897.9	12.99	2884.9	N	-	-	0.0
9	850364.4	1295691.0	2897.7	9.71	2888.0	N	-	-	0.0
10	850347.3	1295680.6	2897.1	14.35	2882.7	N	-	-	0.0
11	850353.5	1295701.5	2897.6	13.54	2884.1	N	-	-	0.0
11A	850352.3	1295699.7	2897.7	NA	-	N	-	-	0.0
12	850356.8	1295766.9	2896.7	17.65	2879.0	N	-	-	0.0
13	850445.9	1295742.4	2910.5	9.10	2901.4	N	-	-	0.0
14	850437.8	1295752.8	2909.8	8.84	2901.0	N	-	-	0.0
15	850461.9	1295758.9	2912.6	5.14	2907.5	N	-	-	0.0
16	850479.3	1295743.9	2917.4	6.37	2911.0	N	-	-	0.0
17	850502.5	1295754.2	2920.4	6.81	2913.6	N	-	-	0.0
18	850516.3	1295729.5	2920.5	2.85	2917.7	N	-	-	0.0
19	850537.8	1295739.6	2924.8	1.60	2923.2	N	-	-	0.0
20	850544.9	1295708.6	2928.8	4.28	2924.5	N	-	-	0.0
21	850539.9	1295690.5	2928.7	3.25	2925.4	N	-	-	0.0
22	850349.7	1295898.6	2897.2	24.37	2872.8	N	-	-	0.0
23	850363.5	1295937.8	2898.1	22.38	2875.7	N	-	-	0.0
24	850400.6	1295951.8	2898.7	17.39	2881.3	N	-	-	0.0
25	850418.5	1295887.3	2898.9	5.10	2893.8	N	-	-	0.0
26	850386.9	1295908.4	2897.1	12.49	2884.6	N	-	-	0.0
27	850418.6	1295880.9	2898.9	5.65	2893.3	N	-	-	0.0
28	850440.1	1295895.3	2900.8	8.73	2892.0	N	-	-	0.0
29	850462.2	1295903.6	2903.4	4.50	2898.9	N	-	-	0.0
30	850482.8	1295890.2	2905.2	0.73	2904.4	N	-	-	0.0
31	850464.6	1295935.9	2901.9	1.83	2900.1	N	-	-	0.0
32	850483.6	1295929.6	2904.0	5.38	2898.6	N	-	-	0.0
33	850499.7	1295924.4	2906.0	7.97	2898.0	N	-	-	0.0
34	850406.1	1295792.3	2899.9	7.21	2892.7	N	-	-	0.0
35	850398.0	1295787.5	2899.3	7.60	2891.7	N	-	-	0.0
36	850409.7	1295772.1	2900.5	5.36	2895.2	Y	2.3	5.4	3.2
37	850393.6	1295773.6	2898.8	9.22	2889.5	MINOR EDGE	-	-	0.0
38	850416.8	1295796.4	2901.1	6.75	2894.3	Y	3.5	6.8	3.3
39	850423.7	1295779.0	2902.6	5.66	2896.9	Y	4.5	5.7	1.2
40	850417.7	1295813.1	2900.5	4.57	2895.9	POSSIBLE	3.0	4.6	1.6
41	850429.3	1295829.4	2901.9	4.88	2897.0	Y	3.0	4.9	1.9
42	850442.9	1295797.3	2904.6	3.58	2901.1	N	-	-	0.0
43	850440.5	1295779.6	2905.3	5.33	2900.0	N	-	-	0.0
44	850406.6	1295833.3	2899.0	9.10	2889.9	Y	2	2.5	0.5
45	850417.0	1295850.2	2899.7	5.60	2894.1	N	-	-	0.0
46	850419.3	1295862.6	2899.7	4.14	2895.6	N	-	-	0.0
47	850456.5	1295808.1	2906.4	0.35	2906.0	N	-	-	0.0
48	850470.8	1295777.7	2911.3	3.08	2908.3	N	-	-	0.0
49	850476.3	1295799.7	2911.4	0.91	2910.5	N	-	-	0.0
50	850498.3	1295806.7	2914.3	1.51	2912.8	N	-	-	0.0
51	850503.4	1295789.7	2916.6	0.67	2915.9	N	-	-	0.0
52	850520.9	1295795.4	2920.2	1.12	2919.1	N	-	-	0.0
53	850526.5	1295770.0	2923.0	2.25	2920.8	N	-	-	0.0
54	850554.4	1295816.4	2923.0	7.98	2915.0	N	-	-	0.0
55	850343.4	1295848.8	2897.0	25.43	2871.5	N	-	-	0.0
56	850355.3	1295803.8	2897.0	21.09	2875.9	N	-	-	0.0
57	850587.5	1295803.5	2925.2	3.08	2922.1	N	-	-	0.0
58	850614.6	1295851.3	2928.7	6.06	2922.6	N	-	-	0.0
59	850672.6	1295902.8	2929.5	0.31	2929.2	N	-	-	0.0
60	850662.8	1295850.5	2935.3	3.09	2932.2	N	-	-	0.0
61	850650.1	1295794.0	2941.4	2.39	2939.0	N	-	-	0.0
62	850645.4	1295751.8	2943.7	3.44	2940.2	N	-	-	0.0
63	850640.7	1295693.8	2948.8	6.58	2942.2	N	-	-	0.0
64	850354.5	1295649.3	2896.9	7.94	2888.9	N	-	-	0.0
65	850364.5	1295635.6	2897.7	8.44	2889.3	N	-	-	0.0
66	850386.4	1295625.8	2900.0	5.01	2895.0	N	-	-	0.0
67	850369.6	1295595.2	2898.7	4.33	2894.4	N	-	-	0.0
68	850387.3	1295604.4	2899.7	1.52	2898.2	N	-	-	0.0
69	850397.8	1295586.4	2901.8	3.80	2898.0	N	-	-	0.0
70	850420.1	1295580.4	2907.0	2.99	2904.0	N	-	-	0.0
71	850449.8	1295569.1	2916.7	6.52	2910.2	N	-	-	0.0
72	850465.9	1295596.1	2919.4	3.95	2915.4	N	-	-	0.0
73	850496.8	1295619.8	2925.4	5.22	2920.2	N	-	-	0.0
74	850503.1	1295653.0	2925.4	5.83	2919.5	N	-	-	0.0
75	850547.3	1295657.2	2932.0	0.30	2931.7	N	-	-	0.0
76	850588.3	1295647.1	2939.5	1.62	2937.8	N	-	-	0.0
77	850635.1	1295619.4	2955.7	2.93	2952.8	N	-	-	0.0
78	850411.7	1295553.3	2909.4	7.75	2901.7	NA	-	-	0.0
79	850450.3	1295550.5	2917.4	5.80	2911.6	NA	-	-	0.0
80	850455.0	1295485.7	2921.2	5.50	2915.7	NA	-	-	0.0
81	850501.4	1295461.6	2931.6	3.00	2928.6	NA	-	-	0.0
82	850527.1	1295508.6	2939.8	8.00	2931.8	NA	-	-	0.0
83	850572.4	1295538.0	2951.2	4.80	2946.4	NA	-	-	0.0
84	850616.7	1295545.0	2956.6	3.80	2952.8	NA	-	-	0.0

Notes:
(a) Lazer Induced Flourescence
(b) Horizontal Datum - Montana Coordinate System NAD83, Single Zone
(c) Vertical Datum - NAVD 88
(d) Below ground surface

Table 3
Summary of Ground Water Analytical Results (in µg/L)
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

Well Name	Date Sampled	Petroleum Hydrocarbons ^(a)				Aromatic Hydrocarbons ^(a)							
		C9 to C10 Aromatics	C5 to C8 Aliphatics	C9 to C12 Aliphatics	Total Purgeable Hydrocarbons	Methyl tert-butyl ether	Benzene	Toluene	Ethylbenzene	m+p-Xylenes	o-Xylene	Total Xylenes	Napthalene
MW1	6/8/08	<20,000	121,000	15,000	189,000	<1,000	23,900	37,900	3,840	11,800	6,460	18,300	743
	7/8/08	7,350	58,400	4,540	121,000	<250	15,300	27,900	2,130	9,820	3,920	13,700	795
	8/13/08 (b)	--	--	--	--	--	5,770	15,200	1,420	7,280	2,760	10,000	--
	9/10/08 (c)	--	--	--	73,000	--	3,790	11,300	1,250	6,150	2,460	8,610	--
MW2	6/9/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
MW3	6/7/08	4,330	19,300	2,320	35,500	<100	3,030	7,360	905	3,320	1,380	4,700	284
	7/8/08	6,130	25,800	4,190	49,600	<60	3,640	10,200	1,180	5,320	2,190	7,510	394
	8/13/08	--	--	--	--	--	1,240	3,780	106	2,320	961	3,280	--
	9/10/08	--	--	--	15,400	--	575	1,600	42	1,280	645	1,920	--
MW4	6/7/08	TRACE PRODUCT											
	7/8/08	8,780	59,100	4,190	114,000	<300	14,500	29,400	3,080	9,560	3,990	13,600	975
	8/13/08	--	--	--	--	--	863	5,110	1,000	8,880	3,180	12,100	--
	9/10/08	--	--	--	48,200	--	1,040	6,140	778	6,730	2,840	9,580	--
MW5	6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	8/13/08	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
	9/10/08	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW6	6/7/08	523	3,720	472	6,760	<10	641	1,550	140	640	268	908	41
	7/8/08	429	1,760	236	3,800	<10	383	963	98	415	200	615	38
	8/13/08	--	--	--	--	--	1,080	2,870	196	1,370	709	2,080	--
	9/10/08	--	--	--	15,700	--	595	1,960	163	1,120	534	1,650	--
MW7	6/7/08	988	8,530	774	15,900	<50	1,690	4,200	333	1,350	661	2,010	111
	7/8/08	1,910	11,100	1,160	21,800	<50	1,960	5,410	513	2,510	1,010	3,520	227
	8/13/08	--	--	--	--	--	1,250	3,560	253	2,170	897	3,070	--
	9/10/08	--	--	--	18,300	--	739	2,510	281	1,900	808	2,700	--
MW8	6/7/08	4,760	33,700	3,890	60,600	<100	5,900	13,800	1,320	5,590	2,230	7,820	428
	7/8/08	4,150	24,700	2,780	56,800	<75	6,180	12,700	1,080	5,660	2,280	7,940	393
	8/13/08	--	--	--	--	--	5,040	12,100	917	5,700	2,300	7,990	--
	9/10/08	--	--	--	52,600	--	3,640	9,550	734	4,780	1,970	6,750	--
MW9	6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	8/13/08	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
	9/10/08	--	--	--	<20	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW10	6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	8/13/08	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
	9/10/08	--	--	--	<20	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
TW1	6/8/08	140	418	128	714	<1	51	91	5.7	22	9.3	31	1.3
	7/7/08	1,630	8,800	1,430	17,200	<25	1,760	3,760	270	1,820	758	2,580	126
	8/12/08	--	--	--	--	--	<0.5	0.96	<0.5	<0.5	<0.5	<0.5	--
	9/11/08	--	--	--	<20	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
TW2	6/8/08	4,340	18,700	2,910	41,200	<100	6,170	10,300	735	3,700	1,830	5,530	296
	7/7/08	2,680	13,000	898	30,900	<100	6,880	8,470	555	2,210	1,450	3,660	184
	8/12/08	--	--	--	--	--	12,200	16,100	678	4,880	2,430	7,320	--
	9/11/08	--	--	--	88,400	--	14,400	17,800	715	4,870	2,220	7,090	--
TW3	6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/7/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	8/12/08	--	--	--	--	--	16	0.57	<0.5	3.2	2.1	5.2	--
	9/11/08	--	--	--	57	--	4.7	0.78	<0.5	4.4	3.5	7.9	--
TW4	6/8/08	1,210	10,300	1,100	19,000	<30	2,190	4,690	236	1,760	766	2,520	123
	7/7/08	2,140	12,300	1,980	25,000	<30	2,540	6,150	371	2,830	1,210	4,040	235
	8/12/08	--	--	--	--	--	3,270	8,710	260	4,480	2,000	6,480	--
	9/11/08	--	--	--	5.4	--	0.45	<0.5	<0.5	<0.5	<0.5	<0.5	--
TW5	6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/7/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	8/12/08	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
	9/11/08	--	--	--	<20	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
TW6	6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/7/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	8/12/08	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
	9/11/08	--	--	--	<20	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
TW7	6/8/08	<20	<20	<20	<20	<1	<0.5	2.2	0.38	2.2	0.6	2.8	<1
	7/7/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	8/12/08	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
	9/11/08	--	--	--	17,400	--	3.8	1.8	<0.5	1.6	0.86	2.5	--
TW8	6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/7/08	<20	164	<20	194	<1	21	19	<0.5	7.0	5.4	12	<1
	8/12/08	--	--	--	--	--	48	101	2.8	75	33	108	--
TW9	6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	7/7/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	8/12/08	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
TW10	6/8/08	6,350	61,200	5,820	110,000	<150	12,100	27,400	2,440	9,640	3,910	13,600	735
	7/7/08	6,460	41,600	4,700	82,000	<150	8,380	20,900	2,210	8,400	3,330	11,700	785
	8/12/08	--	--	--	--	--	6,400	16,800	1,580	8,090	3,370	11,500	--
	9/11/08	--	--	--	75,400	--	4,930	13,900	1,620	7,470	3,060	10,500	--
TW11	6/8/08	8,830	75,000	6,220	147,000	<300	22,200	39,800	3,250	11,700	4,760	16,500	867
	7/7/08	9,800	41,200	4,680	93,000	<300	6,830	27,100	3,150	11,900	4,800	16,700	1120
	8/12/08	--	--	--	--	--	2,220	14,600	2,110	11,400	4,760	16,200	--
	9/11/08	--	--	--	94,400	--	3,590	16,800	2,740	11,800	4,890	16,700	--
TW12	6/8/08	<20	23	<20	43	<1	9.6	10	<0.5	1.9	1	2.9	<1
	7/7/08	16	111	17	218	<1	41	32	3.4	20	14	34	1.5
	8/12/08	--	--</										

Notes:

(a) Analyzed using Method MA-VPH

(b) Ground water samples collected on 8/12 and 8/13, 2008 were analyzed for aromatic hydrocarbons (benzene, toluene, ethylbenzene, and total xylenes; BTEX) using EPA Method 8021B

(c) Ground water samples collected on 9/10 and 9/11, 2008 were analyzed for gasoline-range petroleum hydrocarbons using EPA Method 8015 and BTEX using EPA Method 8021B

Table 4
Summa Canister Air Sampling Results for June 7, 2008 in ppb v/v^(a)
Arnold Residence
Mile Marker 5.2 Mt Highway 35
Polson, Montana

Analyte		Location			
		Arnold Basement	Arnold Main Floor	Background 1	Background 2
Potential Fuel-Related Compounds	1,2,4-Trimethylbenzene	33	4.9	<0.224	0.73
	1,3,5-Trimethylbenzene	24	3.7	<0.248	0.25
	4-Ethyl toluene	15	2.4	<0.183	0.24
	Benzene	670	200	<0.314	1.4
	Butane	180	190	ND	2.7
	Butane, 2,3-dimethyl-	180	160	ND	ND
	Butane, 2-methyl-	480	620	ND	12
	C7 Hydrocarbon	690	710	ND	ND
	Cyclohexane	830	370	<0.359	0.56
	Cyclopentane, methyl-	220	200	ND	ND
	Ethanol	ND	160	1.1	12
	Ethylbenzene	86	17	<0.307	0.58
	Heptane	590	240	<0.302	0.64
	Heptane, 3-methyl-	200	ND	ND	ND
	Hexane	3800	2200	<0.287	2.6
	Hexane, 2,4-dimethyl	190	140	ND	ND
	Hexane, 2-methyl-	290	220	ND	ND
	Hexane, 3-methyl-	310	270	ND	ND
	m,p-Xylene	380	69	<0.520	2
	o-Xylene	150	24	<0.262	0.74
	Pentane	380	380	ND	8.4
	Pentane, 2,3,4-trimethyl-	730	380	ND	ND
	Pentane, 2,3-dimethyl-	610	570	ND	ND
	Pentane, 2-methyl-	260	290	ND	3
	Pentane, 3-methyl-	190	190	ND	ND
	Toluene	1000	270	0.63	5.4
Non Fuel-Related Compounds	Acetone	<2.0	<2.0	<0.195	3.9
	Carbon Disulfide	<3.9	<3.9	<0.388	0.55
	Chloromethane	<4.1	<4.1	0.63	0.67
	Dichlorodifluoromethane	<4.3	<4.3	0.48	0.49
	Ethyl Acetate	<2.6	<2.6	<0.261	1.7
	Methylene Chloride	<3.4	<3.4	<0.339	1.5

(a) Parts per billion, volume/volume basis
Bold - Detected Compound

Table 5
Summa Canister Air Sampling Results for June 7, 2008 in ppb v/v^(a)
Kohler Residence
Mile Marker 5.2 Mt Highway 35
Polson, Montana

Analyte		Location			
		Kohler Basement	Kohler Main Floor	Background 1	Background 2
Potential Fuel-Related Compounds	1,2,4-Trimethylbenzene	26	4	<0.224	0.73
	1,3,5-Trimethylbenzene	9.4	1.5	<0.248	0.25
	1-Butene, 2-methyl-	140	16	ND	ND
	2-Butene, 2-methyl-	190	21	ND	ND
	4-Ethyl toluene	6.4	1	<0.183	0.24
	Benzene	66	11	<0.314	1.4
	Butane	720	63	ND	2.7
	Butane, 2,3-dimethyl-	260	28	ND	ND
	Butane, 2-methyl-	1500	120	ND	12
	C7 Hydrocarbon	370	48	ND	ND
	Cyclohexane	160	35	<0.359	0.56
	Cyclopentane, methyl-	210	23	ND	ND
	Ethanol	99	120	1.1	12
	Ethylbenzene	3.3	0.64	<0.307	0.58
	Heptane	36	6.7	<0.302	0.64
	Hexane	830	180	<0.287	2.6
	Hexane, 3-methyl-	120	ND	ND	ND
	Isobutane	360	38	ND	ND
	m,p-Xylene	12	2.5	<0.520	2
	o-Xylene	7	1.4	<0.262	0.74
	Pentane	830	71	ND	8.4
	Pentane, 2,3-dimethyl-	410	39	ND	ND
	Pentane, 2-methyl-	420	44	ND	3
	Pentane, 3-methyl-	260	26	ND	ND
	Toluene	110	20	0.63	5.4
Non Fuel-Related Compounds	Acetone	<2.0	<0.195	<0.195	3.9
	Carbon Disulfide	<3.9	<0.388	<0.388	0.55
	Chloromethane	<4.1	0.63	0.63	0.67
	Dichlorodifluoromethane	17	3.7	0.48	0.49
	Ethyl Acetate	<2.6	1.7	<0.261	1.7
	Freon 11	<3.8	0.43	<0.384	<0.384
	Methylene Chloride	41	9.5	<0.339	1.5

(a) Parts per billion, volume/volume basis

Bold - Detected Compound

Table 6
Summa Canister Air Sampling Results for June 7, 2008 in ppb v/v^(a)
Jones Residence
Mile Marker 5.2 Mt Highway 35
Polson, Montana

Analyte		Location			
		Jones Basement	Jones Main Floor	Background 1	Background 2
Potential Fuel-Related Compounds	1,2,4-Trimethylbenzene	3.8	5.2	<0.224	0.73
	1,3,5-Trimethylbenzene	1.3	1.7	<0.248	0.25
	2-Butene, 2-methyl-	19	16	ND	ND
	4-Ethyl toluene	0.97	1.4	<0.183	0.24
	Benzene	4.1	5.7	<0.314	1.4
	Butane	97	110	ND	2.7
	Butane, 2,2-dimethyl-	16	12	ND	ND
	Butane, 2,3-dimethyl-	ND	35	ND	ND
	Butane, 2-methyl-	190	230	ND	12
	C7 Hydrocarbon	69	43	ND	ND
	Cyclohexane	35	14	<0.359	0.56
	Cyclopentane, methyl-	34	26	ND	ND
	Ethanol	97	100	1.1	12
	Ethylbenzene	2.5	3.3	<0.307	0.58
	Heptane	3.4	3.2	<0.302	0.64
	Hexane	96	56	<0.287	2.6
	Isobutane	75	67	ND	ND
	m,p-Xylene	10	14	<0.520	2
	o-Xylene	4	5.4	<0.262	0.74
	Pentane	98	110	ND	8.4
	Pentane, 2,3,4-trimethyl-	24	13	ND	ND
	Pentane, 2,3-dimethyl-	51	37	ND	ND
	Pentane, 2-methyl-	61	50	ND	3
	Pentane, 3-methyl-	38	30	ND	ND
	Propane, 2,2-dimethyl-	16	ND	ND	ND
	Toluene	16	21	0.63	5.4
Non Fuel-Related Compounds	2-Butanone	17	11	<0.248	<0.248
	Acetone	<0.195	<0.195	<0.195	3.9
	Carbon Disulfide	<0.388	<0.388	<0.388	0.55
	Chloromethane	1.1	0.96	0.63	0.67
	Dichlorodifluoromethane	0.49	0.5	0.48	0.49
	Ethyl Acetate	<0.261	0.91	<0.261	1.7
	Isopropyl Alcohol	ND	10	ND	ND
	Methylene Chloride	<0.339	<0.339	<0.339	1.5
	Styrene	1.4	1.2	<0.227	<0.227
	Tetrahydrofuran	8.2	1.1	<0.350	<0.350

(a) Parts per billion, volume/volume basis

Bold - Detected Compound

Table 7
Summa Canister Air Sampling Results for June 7, 2008 in ppb v/v^(a)
Sykes Residence
Mile Marker 5.2 Mt Highway 35
Polson, Montana

Analyte		Location			
		Sykes Basement	Sykes Main Floor	Background 1	Background 2
Potential Fuel-Related Compounds	1,2,4-Trimethylbenzene	0.31	0.24	<0.224	0.73
	1,3,5-Trimethylbenzene	<0.248	<0.248	<0.248	0.25
	2-Butene, 2-methyl-	14	11	ND	ND
	4-Ethyl toluene	<0.183	<0.183	<0.183	0.24
	Benzene	11	3.7	<0.314	1.4
	Butane	41	39	ND	2.7
	Butane, 2,3-dimethyl-	18	14	ND	ND
	Butane, 2-methyl-	95	120	ND	12
	C7 Hydrocarbon	31	19	ND	ND
	Cyclohexane	26	8.5	<0.359	0.56
	Cyclopentane, methyl-	17	13	ND	ND
	Ethanol	18	52	1.1	12
	Ethylbenzene	1.9	0.77	<0.307	0.58
	Heptane	11	5.3	<0.302	0.64
	Hexane	190	67	<0.287	2.6
	Hexane, 3-methyl-	15	11	ND	ND
	Isobutane	17	15	ND	ND
	m,p-Xylene	6	2.3	<0.520	2
	o-Xylene	1.5	0.63	<0.262	0.74
	Pentane	57	65	ND	8.4
	Pentane, 2,3-dimethyl-	32	19	ND	ND
	Pentane, 2-methyl-	33	28	ND	3
	Pentane, 3-methyl-	19	15	ND	ND
	Toluene	12	5.7	0.63	5.4
Non Fuel-Related Compounds	1,1,1-Trichloroethane	<0.321	0.55	<0.321	<0.321
	2-Butanone	6.9	5.1	<0.248	<0.248
	Acetone	<0.195	<0.195	<0.195	3.9
	Carbon Disulfide	<0.388	<0.388	<0.388	0.55
	Chloromethane	<0.405	<0.405	0.63	0.67
	Dichlorodifluoromethane	3.3	3.5	0.48	0.49
	Ethane, 1-chloro-1,1-difluoro-	14	18	ND	ND
	Ethyl Acetate	<0.261	<0.261	<0.261	1.7
	Freon 11	4.1	4	<0.384	<0.384
	Isopropyl Alcohol	ND	30	ND	ND
	Methylene Chloride	<0.339	<0.339	<0.339	1.5
	Styrene	0.25	<0.277	<0.277	<0.277
	Tetrahydrofuran	6.9	1.8	<0.350	<0.350

(a) Parts per billion, volume/volume basis

Bold - Detected Compound

Table 8

Summa Cannister Air Sampling Results for June 7, 2008 in ppb v/v^(a)

Rothwell Residence

Mile Marker 5.2 Mt Highway 35

Polson, Montana

Analyte		Location			
		Knudson Basement	Knudson Main Floor	Background 1	Background 2
Potential Fuel-Related Compound	1,2,4-Trimethylbenzene	0.43	0.41	<0.224	0.73
	1,3,5-Trimethylbenzene	<0.248	<0.248	<0.248	0.25
	4-Ethyl toluene	<0.183	<0.183	<0.183	0.24
	Benzene	<0.314	<0.314	<0.314	1.4
	Butane	3.3	3.6	ND	2.7
	Butane, 2-methyl-	ND	ND	ND	12
	C11 Hydrocarbon	2.3	2.4	ND	ND
	Cyclohexane	<0.359	<0.359	<0.359	0.56
	Decane	2.3	ND	ND	ND
	Ethanol	49	55	1.1	12
	Ethylbenzene	1.4	1.4	<0.307	0.58
	Heptane	0.35	0.38	<0.302	0.64
	Hexanal	4	4.3	ND	ND
	Hexane	0.34	0.36	<0.287	2.6
	Isobutane	6.3	6.7	ND	ND
	m,p-Xylene	4.7	4.9	<0.520	2
	o-Xylene	2.3	2.2	<0.262	0.74
	Pentane	ND	ND	ND	8.4
	Pentane, 2-methyl-	ND	ND	ND	3
	Toluene	2.3	2.4	0.63	5.4
Non Fuel-Related Compounds	.alpha.-Pinene	3.3	3.4	ND	ND
	1,1-Dichloro-1-Fluoroethane	2.5	2.4	ND	ND
	2-Butanone	22	21	<0.248	<0.248
	4-Heptanone, 2,6-dimethyl-	3.3	ND	ND	ND
	Acetone	40	43	<0.195	3.9
	Carbon Disulfide	<0.388	<0.388	<0.388	0.55
	Chloromethane	<0.405	<0.405	0.63	0.67
	Dichlorodifluoromethane	0.52	0.49	0.48	0.49
	Ethane, 1-chloro-1,1-difluoro-	50	49	ND	ND
	Ethyl Acetate	0.28	0.31	<0.261	1.7
	Isopropyl Alcohol	3	3.4	ND	ND
	Methylene Chloride	0.36	0.35	<0.339	1.5
	Styrene	1.2	1.2	<0.227	<0.227
	Tetrahydrofuran	3.4	3.6	<0.350	<0.350

(a) Parts per billion, volume/volume basis

Bold - Detected Compound

Table 9
Summary of Potentially Applicable Cleanup Levels for Air, Soil, and Ground Water
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

Compound	CAS #	Air Cleanup Levels ^(a)		Soil Cleanup Levels			Ground Water Cleanup Levels		Surface Water Cleanup Levels ^(g)	
				PRGs ^(b)	RBSL ^(c) (0-2 ft)	RBSL ^(d) (>2 ft)	PRGs ^(e)	MCLs ^(f)	Water & Organism	Organism Only
		ug/m ³	ppb, V/V	mg/kg	mg/kg	mg/kg	µg/L	µg/L	µg/L	µg/L
Gasoline-Range Organics	---	NVE	NVE	NVE	NVE	NVE	NVE	NVE	NVE	NVE
C5-C8 Aliphatics	---	NVE	NVE	NVE	40	300	NVE	NVE	NVE	NVE
C9-C12 Aliphatics	---	NVE	NVE	NVE	90	500	NVE	NVE	NVE	NVE
C9-C10 Aromatics	---	NVE	NVE	NVE	100	100	NVE	NVE	NVE	NVE
Benzene*	71-43-2	0.31	0.098	1.1	0.04	0.04	0.41	5	2.2	51
Toluene	108-88-3	400	110	5,000	10	10	2,300	1,000	1,300	15,000
Ethylbenzene*	100-41-4	2.2	0.51	5.7	10	10	1.5	700	530	2,100
Xylene, mixture	1330-20-7	NVE	NVE	600	30	200	200	10,000	NVE	NVE
m-Xylene	108-38-3	7,000	1,600	4,500	NVE	NVE	1,400	NVE	NVE	NVE
p-Xylene	106-42-3	7,000	1,600	4,700	NVE	NVE	1,500	NVE	NVE	NVE
o-Xylene	95-47-6	7,000	1,600	5,300	NVE	NVE	1,400	NVE	NVE	NVE
Naphthalene	91-20-3	3.0	0.57	150	9	9	6.2	NVE	NVE	NVE
Methyl tert-butyl ether (MTBE)*	1634-04-4	3,000	830	39	0.08	0.08	12	NVE	NVE	NVE
Hexane	110-54-3	200	57	570	NVE	NVE	880	NVE	NVE	NVE
Cyclohexane	110-82-7	NVE	NVE	7,200	NVE	NVE	13,000	NVE	NVE	NVE
Ethanol	64-17-5	NVE	NVE	NVE	NVE	NVE	NVE	NVE	NVE	NVE
1,2-Dibromoethane*	106-93-4	0.011	0.0014	0.034	NVE	NVE	0.0065	0.05	NVE	NVE
1,2-Dichloroethane*	107-06-2	0.094	0.023	0.45	NVE	NVE	0.15	5	NVE	NVE
1,2,4-Trimethylbenzene	95-63-6	6.0	1.2	67	NVE	NVE	15	NVE	NVE	NVE
1,3,5-Trimethylbenzene	108-67-8	6.0	1.2	NVE	NVE	NVE	NVE	NVE	NVE	NVE

(a) Office of Solid Waste and Emergency Response

(b) EPA Region 9 Preliminary Remediation Goals based on residential use and protection of ground water as a drinking water source. Combined risk for ingestion and inhalation.

(c) Montana Department of Environmental Quality Tier I Surface Soil (0-2 ft) Risk-Based Screening Levels

(d) Montana Department of Environmental Quality Tier I Subsurface Soil (>2 ft) Risk-Based Screening Levels

(e) EPA Region 9 Preliminary Remediation goals for ground water based on human ingestion

(f) EPA Maximum Contaminant Levels

(g) Confederated Salish and Kootenai Tribes Surface Water Quality Standards and Antidegradation Policy, April 11, 2006.

NVE - No Value Established

* - Known or suspected human carcinogen

Table 10
Summary of Current Sampling Frequency and Requested Analysis
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

Sample Location	Current Frequency		Analysis Requested	
	Daily	Monthly	Petroleum Hydrocarbons-Volatile ^(a)	VOCs ^(b)
Supply Well	X		X	X
Cistern	X		X	X
Post Pressure Tank	X		X	X
System Influent	X		X	
System Post Sparge	X		X	
Carbon Mid-Barrel	X		X	
System Effluent	X		X	
N1430	X		X	
S310	X		X	
MW1		X	X	
MW2	X		X	X
MW3		X	X	
MW4		X	X	
MW5		X	X	
MW6		X	X	
MW7		X	X	
MW8		X	X	
MW9		X	X	
MW10		X	X	
TW1		X	X	
TW2		X	X	
TW3		X	X	
TW4		X	X	
TW5		X	X	
TW6		X	X	
TW7		X	X	
TW8		X	X	
TW9		X	X	
TW10		X	X	
TW11		X	X	
TW12		X	X	
TW13		X	X	
P4		X	X	
Lagoon 1	X		X	
Lagoon 2	X		X	
Lagoon 3	X		X	

Notes:

(a) Using MA-VPH Analytical Methods

(b) Volatile Organic Compounds by EPA Method E524.2

Table 11
Summary of Proposed Sampling Frequency and Proposed Analysis
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

Sample Location	Proposed Frequency				Proposed Analysis		
	Monday, Wednesday, and Friday	Daily (Monday through Friday)	Weekly	Monthly	Gasoline-Range Petroleum Hydrocarbons ^(a)	VOCs ^(b)	BTEX ^(c)
Supply Well		X				X	
Post Pressure Tank		X				X	
System Influent	X ^(d)				X		X
System Post Sparge	X ^(d)				X		X
Carbon Mid-Barrel	X ^(d)				X		X
System Effluent	X ^(d)				X		X
N143			X				X ^(f)
S310			X				X ^(f)
MW1				X	X		X
MW2		X		X	X ^(e)	X ^(e)	X ^(e)
MW3				X	X		X
MW4				X	X		X
MW5				X	X		X
MW6				X	X		X
MW7				X	X		X
MW8				X	X		X
MW9				X	X		X
MW10				X	X		X
MW11				X	X		X
MW12				X	X		X
MW13				X	X		X
MW14				X	X		X
MW15				X	X		X
MW16				X	X		X
MW17				X	X		X
MW18				X	X		X
MW19				X	X		X
MW20				X	X		X
MW21				X	X		X
TW1				X	X		X
TW2				X	X		X
TW3				X	X		X
TW4				X	X		X
TW6				X	X		X
TW7				X	X		X
TW10				X	X		X
TW11				X	X		X
TW12				X	X		X
TW13				X	X		X
PW-1				X			X
Lagoon 1			X				X ^(f)
Lagoon 2			X				X ^(f)
Lagoon 3			X				X ^(f)
Lake 1				X			X ^(f)
Lake 2				X			X ^(f)
Lake 3				X			X ^(f)
Lake 4				X			X ^(f)
Lake 5				X			X ^(f)
Lake 6				X			X ^(f)

Notes:

- (a) Using NWTPH-Gx Analytical Methods
- (b) Volatile organic compounds by EPA Method 524.2
- (c) Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8021B
- (d) Sampling and analysis reduced to weekly after establishing compliance for 4 consecutive weeks
- (e) VOCs analyzed for the daily sampling events, gasoline-range petroleum hydrocarbons and BTEX analysis for the monthly sampling events
- (f) Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 602

Table 12
Summary of Water Supply Analytical Results (in µg/L); Supply Well
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

[illegible]

Table 12
Summary of Water Supply Analytical Results (in µg/L); Supply Well
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

Date Sampled	Petroleum Hydrocarbons ^(a)				Aromatic Hydrocarbons ^(a)								Detected VOCs ^(b)		
	C9 to C10 Aromatics	C5 to C8 Aliphatics	C9 to C12 Aliphatics	Total Purgeable Hydrocarbons	Methyl tert-butyl ether ^(b)	Benzene	Toluene	Ethylbenzene	m+p-Xylenes	o-Xylene	Total Xylenes	Napthalene ^(b)	Chloromethane	Chloroform, ug/L	Trihalo-methanes, Total, ug/L
8/8/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/9/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/11/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/12/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/13/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/14/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/15/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/16/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/18/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/19/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/20/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/21/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/22/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/23/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/25/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/26/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/27/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/28/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/29/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/2/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/3/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/4/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/5/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/6/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/8/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/9/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/10/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/11/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.41	0.41
9/12/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/15/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/16/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/17/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/19/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/22/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/23/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/24/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.74	<0.5	<0.5
9/25/08			--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.65	<0.5	<0.5

Notes:

(a) Analyzed using Method MA-VPH

(b) Analyzed using Method E524.2

Chlorination unit installed for drinking water system on 8-19-08

Table 13
Summary of Water Supply Analytical Results (in µg/L); Cistern Samples
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

Date Sampled	Petroleum Hydrocarbons ^(a)				Aromatic Hydrocarbons ^(a)								Detected VOCs ^(b)
	C9 to C10 Aromatics	C5 to C8 Aliphatics	C9 to C12 Aliphatics	Total Purgeable Hydrocarbons	Methyl tert- butyl ether	Benzene	Toluene	Ethylbenzene	m+p- Xylenes	o-Xylene	Total Xylenes	Napthalene	Chloromethane
6/2/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/4/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/5/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/6/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/7/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/8/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/9/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/10/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/11/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/12/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/13/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/14/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
6/16/08	<20	<20	<20	<20	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	0.6

Notes:
(a) Analyzed using Method MA-VPH
(b) Analyzed using Method E524.2

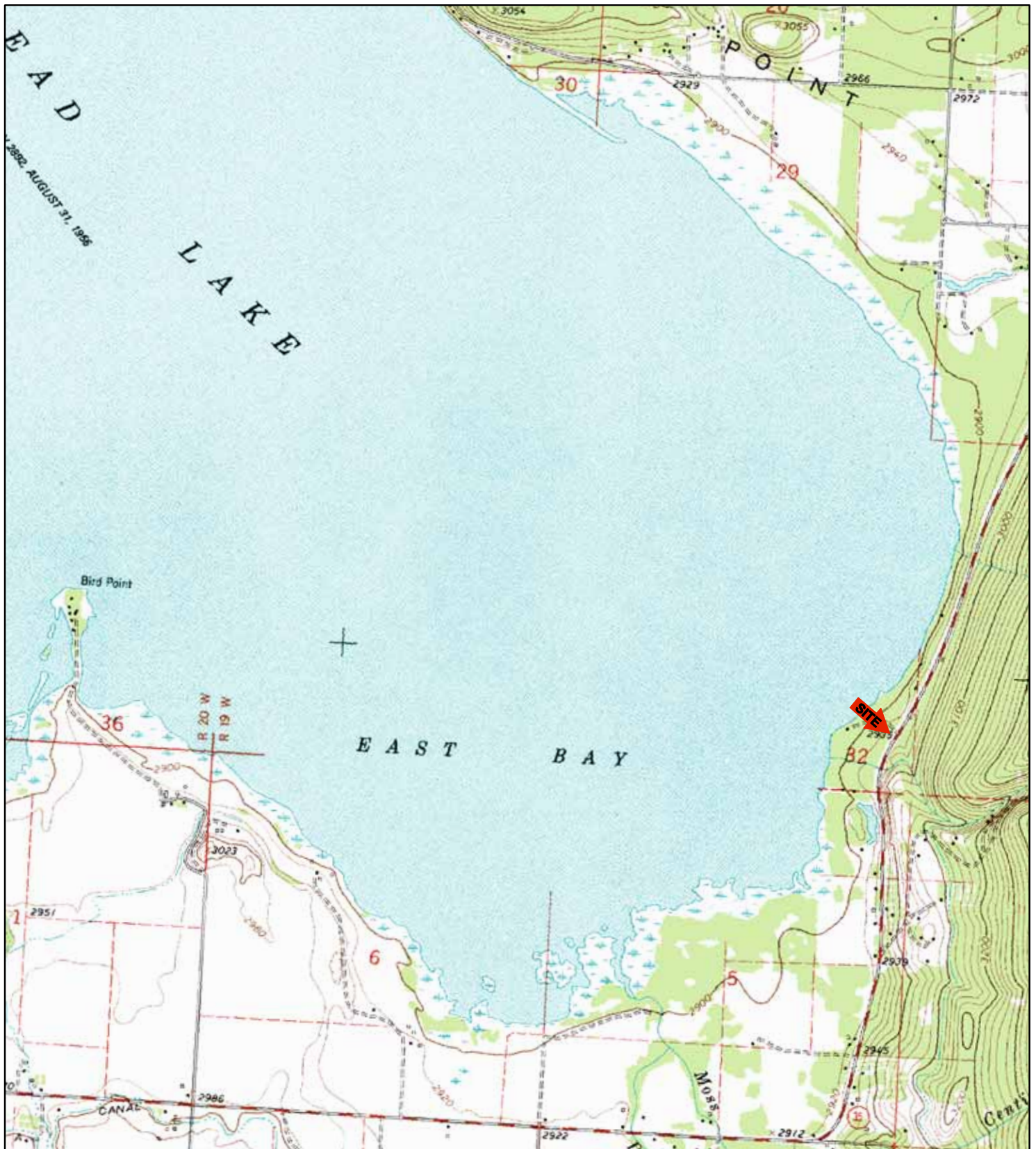
[illegible]

Table 14
Summary of Water Supply Analytical Results (in µg/L); System Discharge
Keller Transport Spill Site
Mile Marker 5.2 Highway 35
Polson, Montana

Date Sampled	Petroleum Hydrocarbons ^(a)				Aromatic Hydrocarbons ^(a)								Detected VOCs ^(b)						
	C9 to C10 Aromatics	C5 to C8 Aliphatics	C9 to C12 Aliphatics	Total Purgeable Hydrocarbons	Methyl tert- butyl ether ^(b)	Benzene	Toluene	Ethylbenzene	m+p- Xylenes	o-Xylene	Total Xylenes	Napthalene ^(b)	Bromodichloro- methane	Chlorodibromo- methane	Chloroform	Chloromethane	2-Chloro- toluene	4-Chloro- toluene	Trihalomethanes, Total
8/13/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/14/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/15/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/16/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/18/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/19/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8/20/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.15	0.18	0.17	<0.5	<0.5	<0.5	0.5
8/21/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.2	0.24	0.25	<0.5	<0.5	<0.5	0.68
8/22/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.26	0.27	0.29	<0.5	<0.5	<0.5	0.82
8/23/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.24	0.27	0.27	<0.5	<0.5	<0.5	0.78
8/25/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.22	0.26	0.26	<0.5	<0.5	<0.5	0.74
8/26/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.18	0.22	0.25	<0.5	<0.5	<0.5	0.65
8/27/08	--	--	--	--	<0.5	<0.5	0.16	<0.5	<0.5	<0.5	<0.5	<0.5	0.2	0.27	0.31	<0.5	1.2	0.54	0.78
8/28/08	--	--	--	--	<0.5	<0.5	0.12	<0.5	<0.5	<0.5	<0.5	<0.5	0.23	0.31	0.35	<0.5	1.4	0.62	0.89
8/29/08	--	--	--	--	<0.5	<0.5	6.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.16	0.21	0.26	<0.5	<0.5	<0.5	0.64
9/2/08	--	--	--	--	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.25	<0.5	<0.5	<0.5	0.25
9/3/08	--	--	--	--	<0.5	<0.5	0.66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/4/08	--	--	--	--	<0.5	<0.5	0.52	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/5/08	--	--	--	--	<0.5	<0.5	0.36	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9/6/08	--	--	--	--	<0.5	<0.5	0.26	<0.5	<0.5	<0.5	<0.5	<0.5	0.15	0.22	0.27	<0.5	<0.5	<0.5	0.63
9/8/08	--	--	--	--	<0.5	<0.5	0.19	<0.5	<0.5	<0.5	<0.5	<0.5	0.18	0.25	0.28	<0.5	<0.5	<0.5	0.71
9/9/08	--	--	--	--	<0.5	<0.5	0.19	<0.5	<0.5	<0.5	<0.5	<0.5	0.23	0.30	0.36	<0.5	<0.5	<0.5	0.88
9/10/08	--	--	--	--	<0.5	<0.5	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.21	0.30	0.38	<0.5	<0.5	<0.5	0.9
9/11/08	--	--	--	--	<0.5	<0.5	0.18	<0.5	<0.5	<0.5	<0.5	<0.5	0.28	<0.5	0.7	<0.5	<0.5	<0.5	0.98
9/12/08	--	--	--	--	<0.5	<0.5	0.16	<0.5	<0.5	<0.5	<0.5	<0.5	0.37	0.4	0.88	<0.5	<0.5	<0.5	1.6
9/15/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.18	0.26	0.28	<0.5	<0.5	<0.5	0.72
9/16/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.19	0.28	0.34	<0.5	<0.5	<0.5	0.81
9/17/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.21	0.32	0.3	<0.5	<0.5	<0.5	0.83
9/18/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.29	0.35	0.5	<0.5	<0.5	<0.5	1.1
9/22/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.33	0.33	0.65	<0.5	<0.5	<0.5	1.3
9/23/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.37	0.39	0.88	<0.5	<0.5	<0.5	1.6
9/24/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.33	0.33	0.79	0.86	<0.5	<0.5	1.5
9/25/08	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.34	0.32	0.83	0.65	<0.5	<0.5	1.5

Notes:
(a) Analyzed using Method MA-VPH
(b) Analyzed using Method E524.2
Chlorination unit installed for drinking water system on 8-19-08

Figures



KEY:

SOURCE: USGS 7.5 MINUTE QUADRANGLE
(TOPOGRAPHIC)



EAST BAY, MONT.
1958

REVISED 1964

SCALE = 1:24,000



**ENVIRONMENTAL
PARTNERS INC**

295 NE Gilman Boulevard, Suite 201
Issaquah, Washington 98027

FIGURE 1

GENERAL VICINITY MAP

PROJECT

56401.1

**PREPARED
FOR**

ACE WESTCHESTER SPECIALTY GROUP

LOCATION

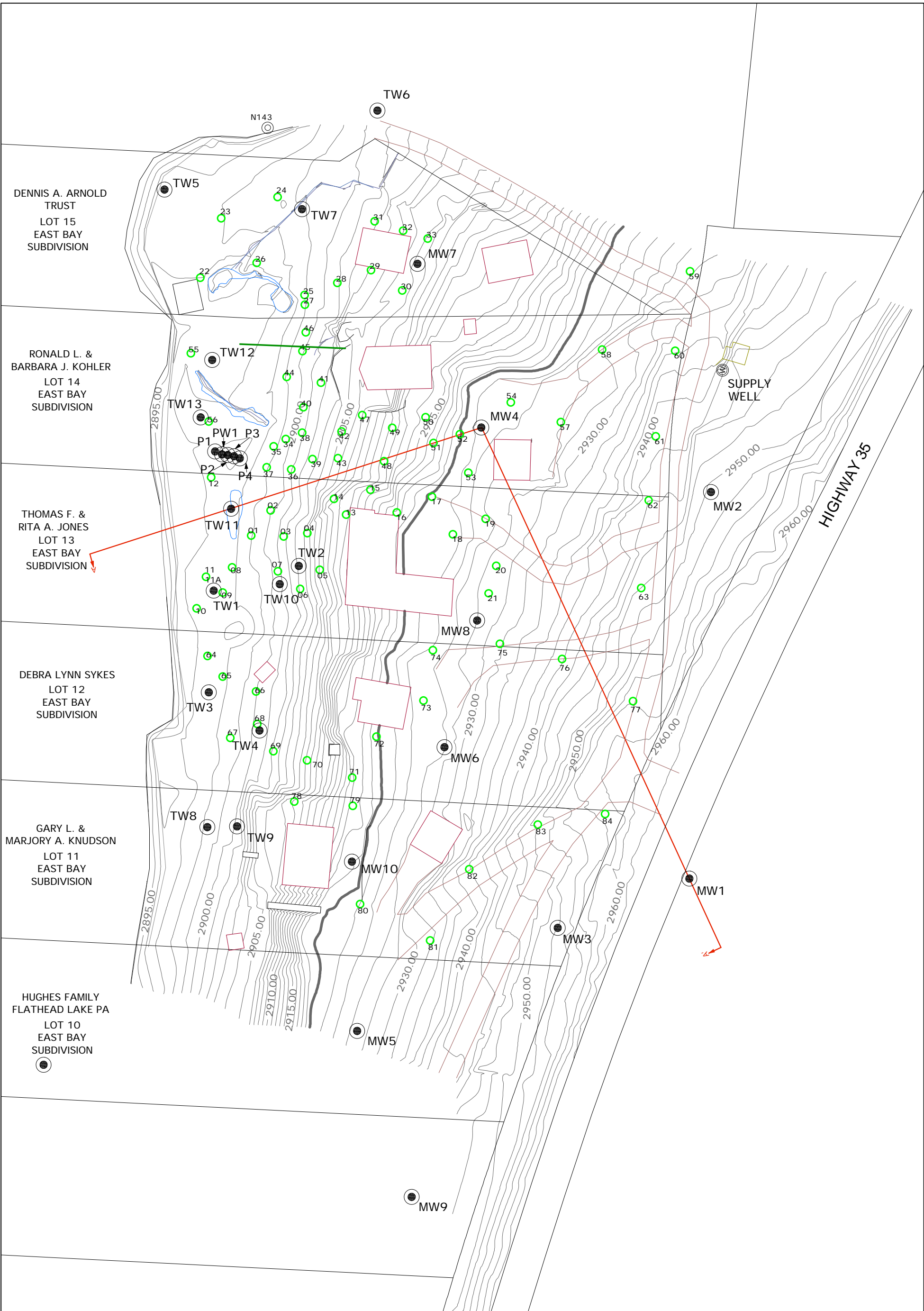
HIGHWAY 35
POLSON, MONTANA




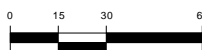

SHEET
1 of 1

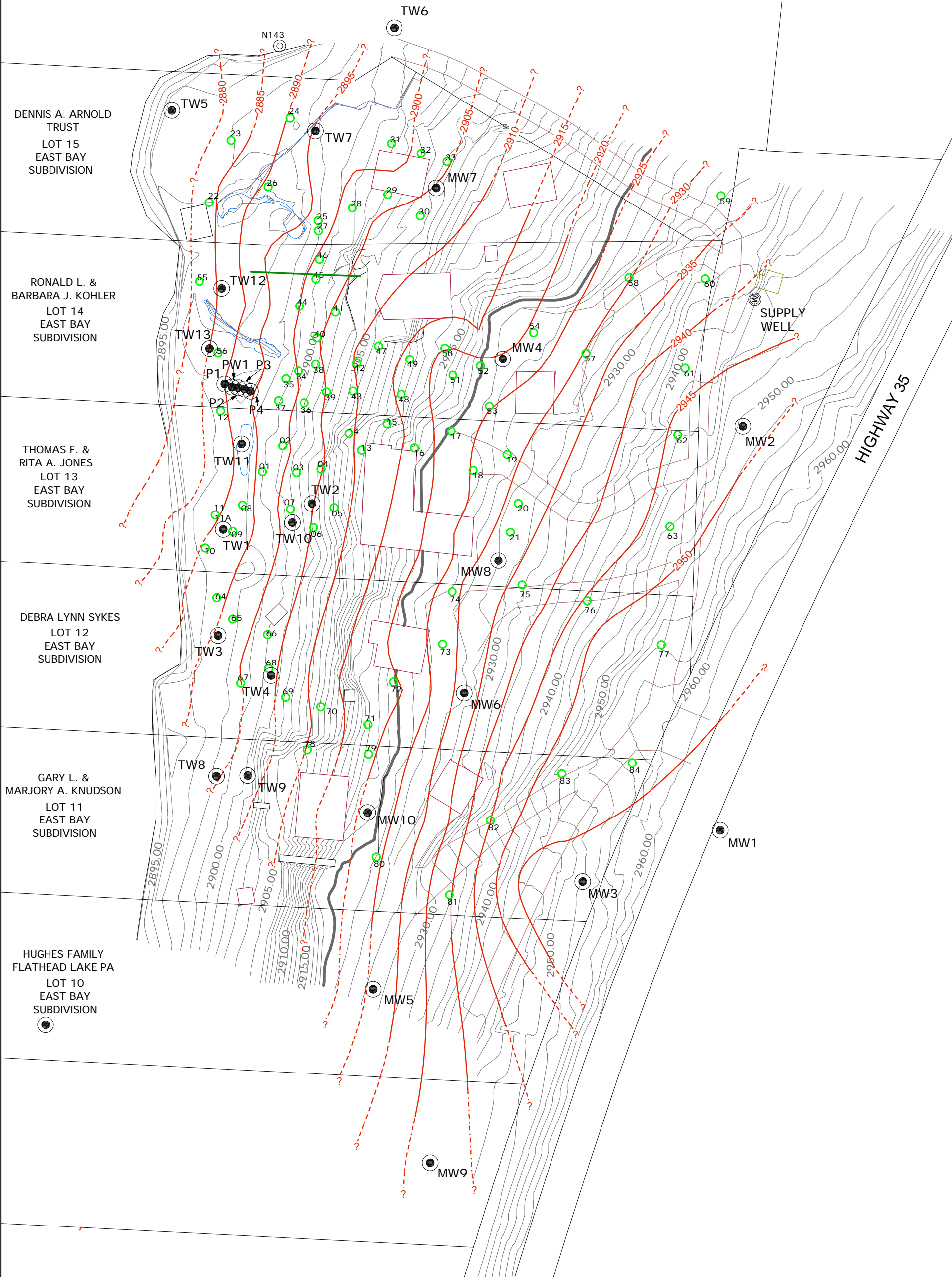
DRAWN BY
ARM

REVIEWED BY
EMK

DATE
06/26/08



<div>KEY:</div> <div></div> <div> MW-3 MONITORING WELL LOCATION</div> <div> 30 LIF BORING LOCATION</div> <div> SCALE: 1" = 60"</div>	<div> ENVIRONMENTAL PARTNERS INC 295 NE Gilman Boulevard, Suite 201 Issaquah, Washington 98027</div> <div>FIGURE 2</div> <div>SITE REPRESENTATION WITH TOPOGRAPHIC ELEVATION CONTOURS</div>	PROJECT	56401.1		
		PREPARED FOR	ACE WESTCHESTER SPECIALTY GROUP		
		LOCATION	HIGHWAY 35 POLSON, MONTANA		
		SHEET 1 of 1	DRAWN BY ARM	REVIEWED BY EMK	DATE 06/25/08



KEY:

0 15 30 60
SCALE: 1" = 60'

MW-3 ● MONITORING WELL LOCATION

30 ○ LIF BORING LOCATION

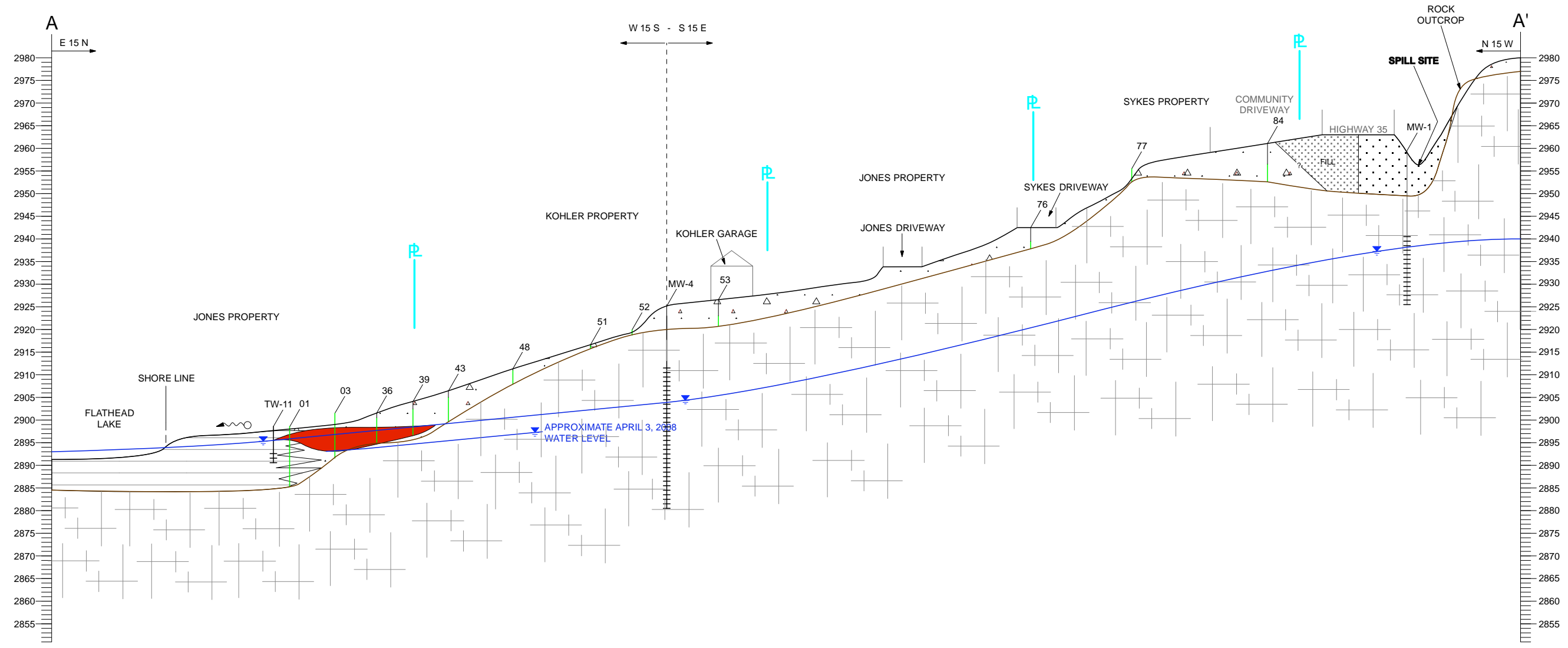
--- BEDROCK SURFACE ELEVATION CONTOUR IN FEET, DASHED WHERE INFERRED, QUERIED WHERE UNCERTAIN

ENVIRONMENTAL PARTNERS INC
295 NE Gilman Boulevard, Suite 201
Issaquah, Washington 98027


FIGURE 3

BEDROCK SURFACE ELEVATIONS


PROJECT	56401.1		
PREPARED FOR	ACE WESTCHESTER SPECIALTY GROUP		
LOCATION	HIGHWAY 35 POLSON, MONTANA		
SHEET 1 of 1	DRAWN BY ARM	REVIEWED BY EMK	DATE 06/25/08



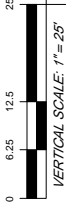
- NOTES:**
- SEPARATE-PHASE HYDROCARBONS IN SOIL BASED ON LIF INVESTIGATION
 - LIMESTONE/DOLOMITE BEDROCK
 - LACUSTRINE SEDIMENT
 - UPLAND COLLUVIUM
 - STRATIGRAPHIC FACIES BETWEEN LACUSTRINE AND COLLUVIAL SEDIMENTS (LOCATION VARIABLE)
 - INTERIM REMEDIAL ACTION EXCAVATION
 - OVERLAND SEEP (LOCATIONS VARIABLE)

 ENVIRONMENTAL PARTNERS INC. 295 NE Gilman Boulevard, Suite 201 Issaquah, Washington 98027	PROJECT	56401.1
	PREPARED FOR	ACE WESTCHESTER SPECIALTY GROUP
	LOCATION	HIGHWAY 35 POLSON, MONTANA
	SHEET	1 of 1
FIGURE 4 INTERPRETIVE CROSS-SECTION A - A'	DRAWN BY	ARM
	REVIEWED BY	EMK
	DATE	06/25/08

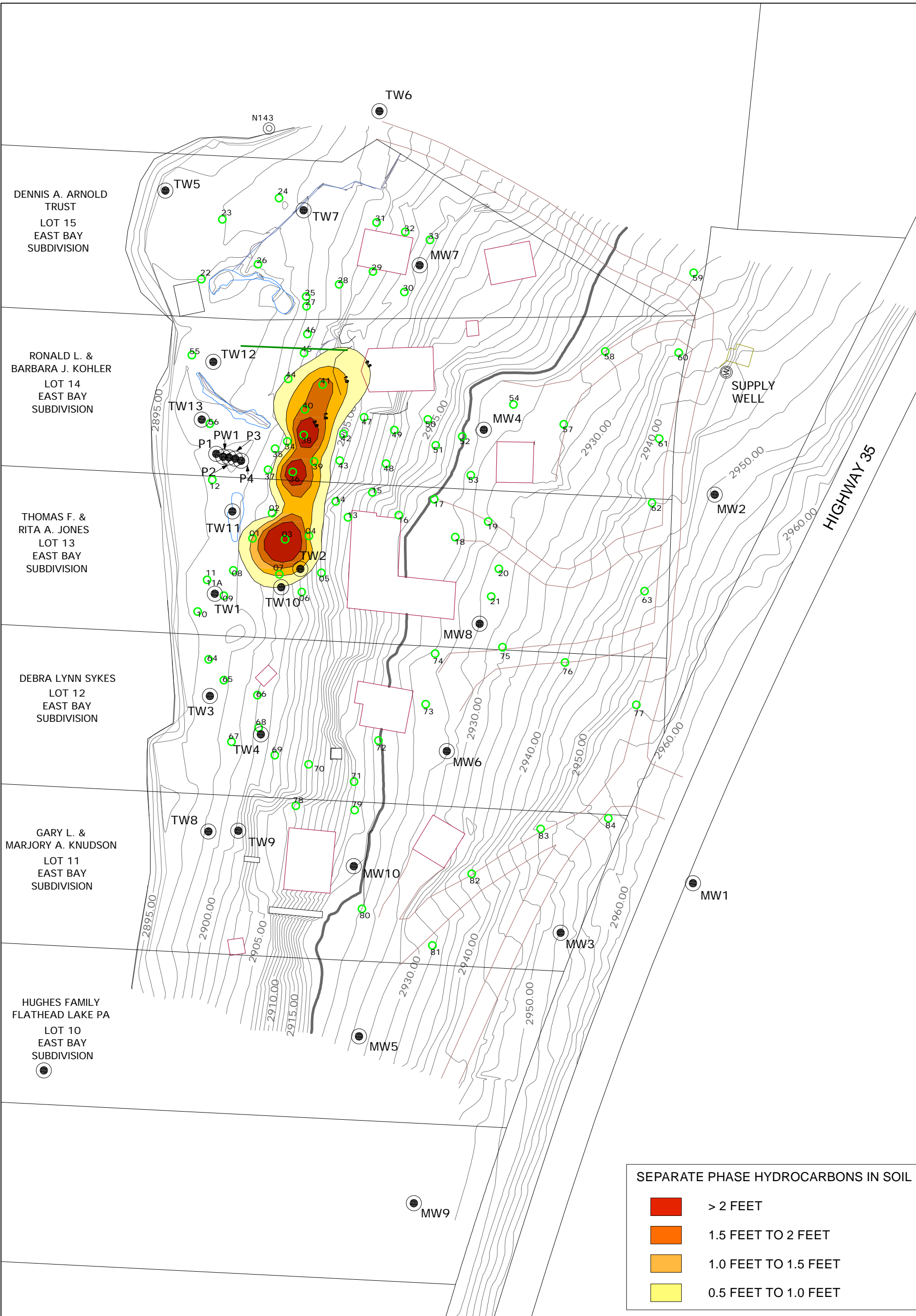
KEY:



HORIZONTAL SCALE: 1" = 50'



VERTICAL SCALE: 1" = 25'
2x VERTICAL EXAGGERATION



SEPARATE PHASE HYDROCARBONS IN SOIL	
<div></div>	> 2 FEET
<div></div>	1.5 FEET TO 2 FEET
<div></div>	1.0 FEET TO 1.5 FEET
<div></div>	0.5 FEET TO 1.0 FEET

KEY:

0153060

SCALE: 1" = 60'

MW-3

MONITORING WELL LOCATION

30

LIF BORING LOCATION

(a)

SEPARATE PHASE HYDROCARBONS

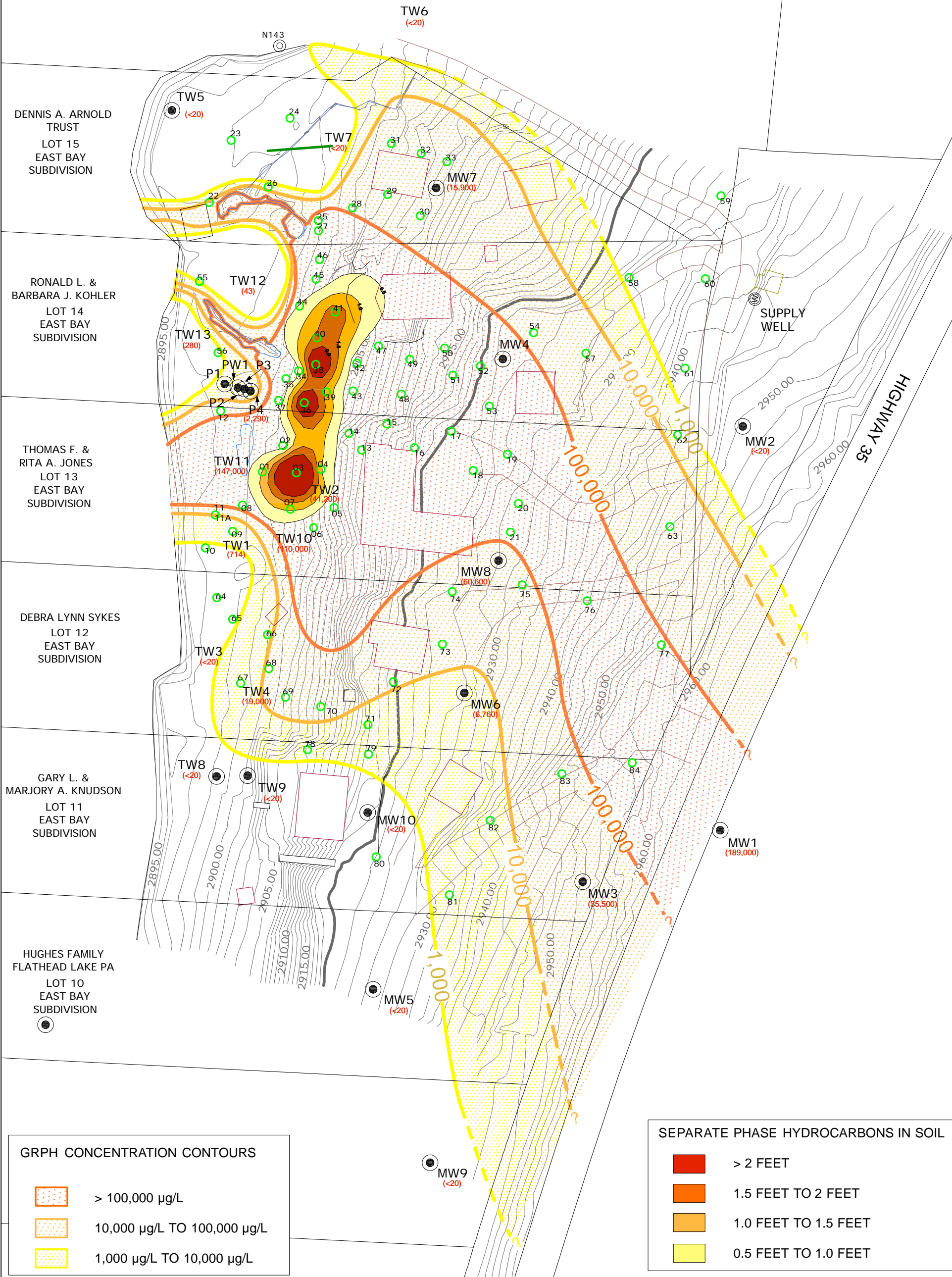
ENVIRONMENTAL PARTNERS INC

295 NE Gilman Boulevard, Suite 201
Issaquah, Washington 98027

FIGURE 6

DISTRIBUTION OF SPH^(a) IN SOIL

PROJECT	56401.1		
PREPARED FOR	ACE WESTCHESTER SPECIALTY GROUP		
LOCATION	HIGHWAY 35 POLSON, MONTANA		
SHEET	DRAWN BY	REVIEWED BY	DATE
1 of 1	ARM	EMK	06/25/08



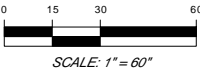
GRPH CONCENTRATION CONTOURS

- > 100,000 µg/L
- 10,000 µg/L TO 100,000 µg/L
- 1,000 µg/L TO 10,000 µg/L

SEPARATE PHASE HYDROCARBONS IN SOIL

- > 2 FEET
- 1.5 FEET TO 2 FEET
- 1.0 FEET TO 1.5 FEET
- 0.5 FEET TO 1.0 FEET

KEY:



MW-3
(35,500)

30



(a)

MONITORING WELL LOCATION WITH GRPH CONCENTRATION IN µg/L

LIF BORING LOCATION

GRPH CONCENTRATION CONTOUR IN µg/L, DASHED WHERE INFERRED, QUERIED WHERE UNCERTAIN

GASOLINE-RANGE PETROLEUM HYDROCARBONS AS INDICATED BY TOTAL PURGEABLE HYDROCARBONS IN THE VOLATILE RANGE USING MA-VPH ANALYTICAL METHODS



ENVIRONMENTAL PARTNERS INC

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FIGURE 7

DISTRIBUTION OF GRPH[®] IN SHALLOW GROUND WATER, JUNE 7 THROUGH JUNE 9, 2008

PROJECT

56401.1

PREPARED FOR

ACE WESTCHESTER SPECIALTY GROUP

LOCATION

HIGHWAY 35
POLSON, MONTANA

SHEET

1 of 1

DRAWN BY

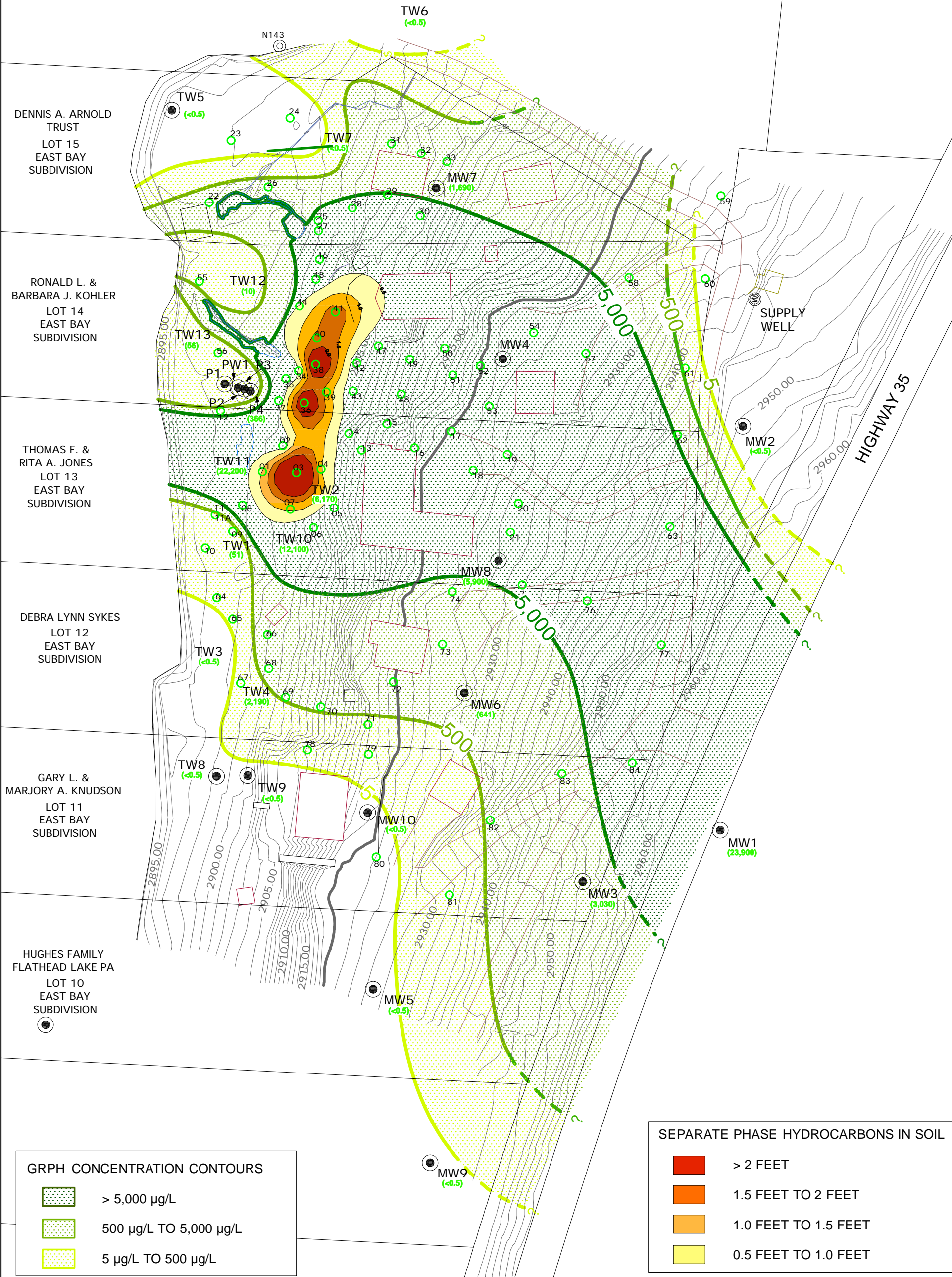
ARM

REVIEWED BY

EMK

DATE

06/25/08



GRPH CONCENTRATION CONTOURS

- > 5,000 µg/L
- 500 µg/L TO 5,000 µg/L
- 5 µg/L TO 500 µg/L

SEPARATE PHASE HYDROCARBONS IN SOIL

- > 2 FEET
- 1.5 FEET TO 2 FEET
- 1.0 FEET TO 1.5 FEET
- 0.5 FEET TO 1.0 FEET

KEY:



MW-3
(3,030)

MONITORING WELL LOCATION WITH BENZENE
CONCENTRATION IN µg/L

30

LIF BORING LOCATION



BENZENE CONCENTRATION CONTOUR
IN µg/L, DASHED WHERE INFERRED,
QUERIED WHERE UNCERTAIN



ENVIRONMENTAL
PARTNERS INC.

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Issaquah, Washington 98027

FIGURE 8

DISTRIBUTION OF BENZENE IN SHALLOW
GROUND WATER,
JUNE 7 THROUGH JUNE 9, 2008

PROJECT

56401.1

PREPARED
FOR

ACE WESTCHESTER SPECIALTY GROUP

LOCATION

HIGHWAY 35
POLSON, MONTANA

SHEET

1 of 1

DRAWN BY

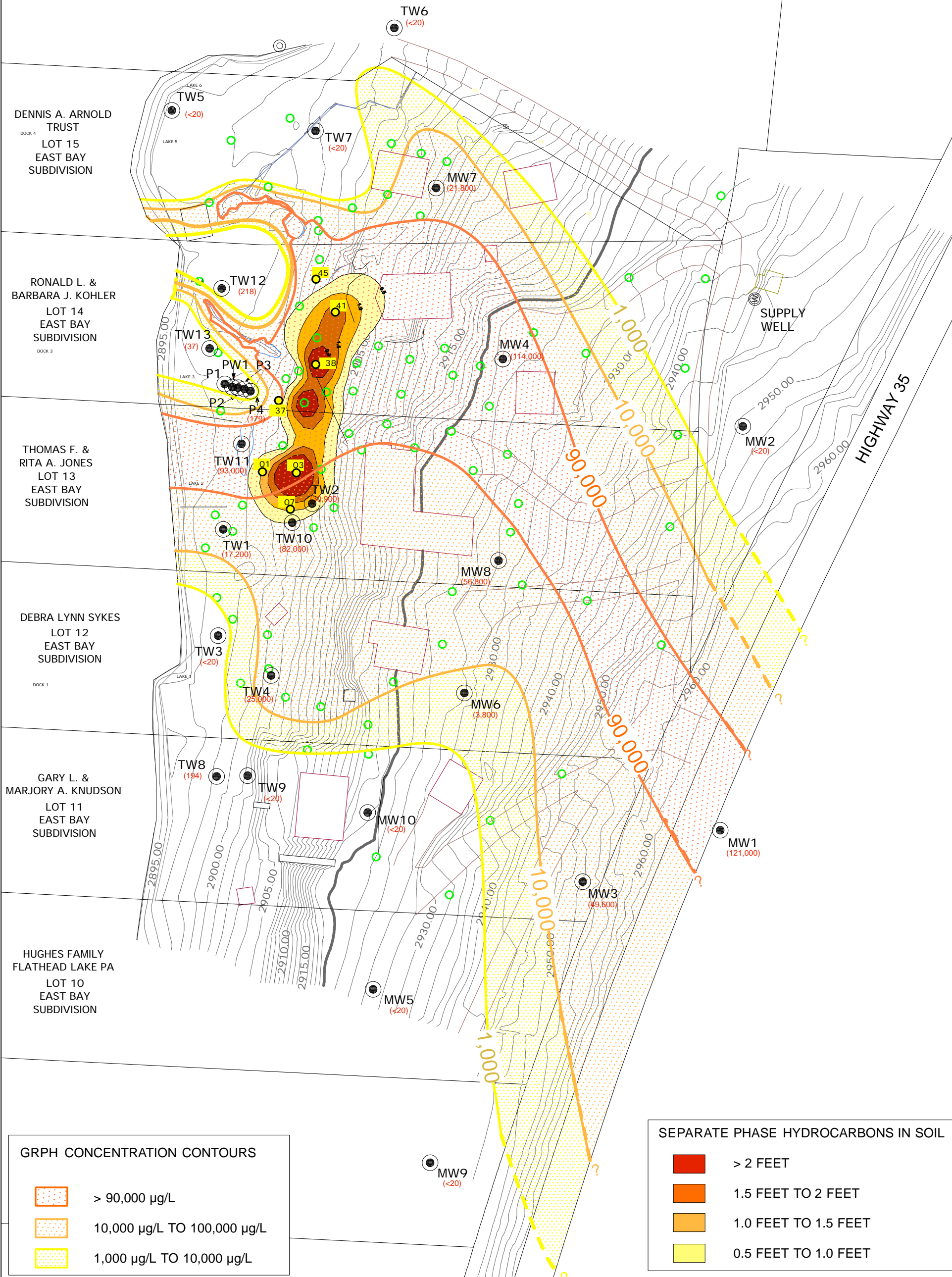
ARM

REVIEWED BY

EMK

DATE

07/28/08



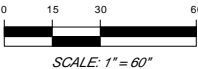
GRPH CONCENTRATION CONTOURS

- > 90,000 µg/L
- 10,000 µg/L TO 100,000 µg/L
- 1,000 µg/L TO 10,000 µg/L

SEPARATE PHASE HYDROCARBONS IN SOIL

- > 2 FEET
- 1.5 FEET TO 2 FEET
- 1.0 FEET TO 1.5 FEET
- 0.5 FEET TO 1.0 FEET

KEY:



(a)

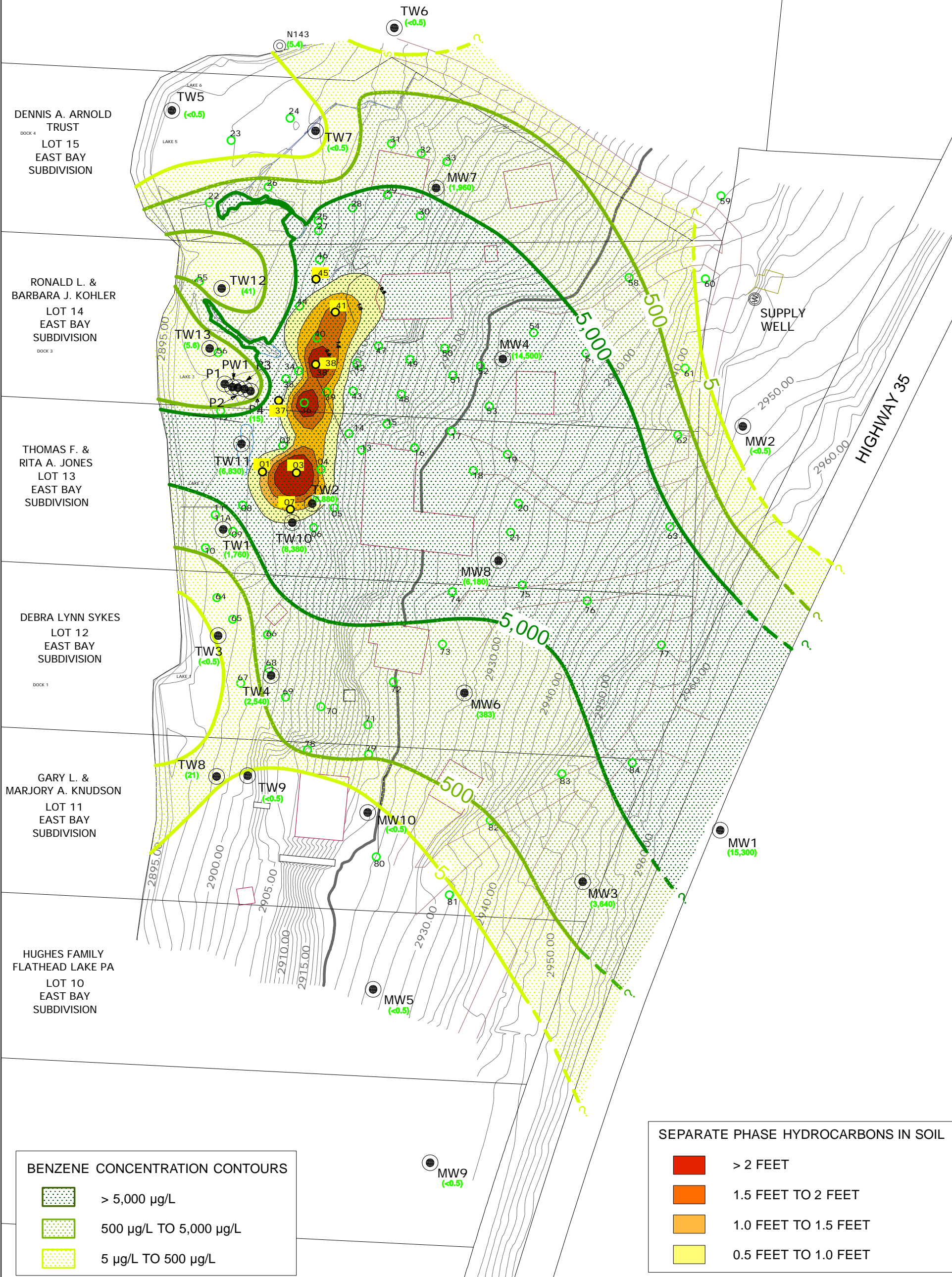
MONITORING WELL LOCATION WITH GRPH CONCENTRATION IN µg/L
LIF BORING LOCATION
LIF CONFIRMATIONAL SAMPLING LOCATION
GRPH CONCENTRATION CONTOUR IN µg/L, DASHED WHERE INFERRED, QUERIED WHERE UNCERTAIN
GASOLINE-RANGE PETROLEUM HYDROCARBONS AS INDICATED BY TOTAL PURGEABLE HYDROCARBONS IN THE VOLATILE RANGE USING MA-VPH ANALYTICAL METHODS

epl ENVIRONMENTAL PARTNERS INC
295 NE Gilman Boulevard, Suite 201
Issaquah, Washington 98027

FIGURE 9

DISTRIBUTION OF GRPH^(a) IN SHALLOW GROUND WATER
JULY 7 THROUGH JULY 8, 2008

PROJECT	56401.1		
PREPARED FOR	ACE WESTCHESTER SPECIALTY GROUP		
LOCATION	HIGHWAY 35 POLSON, MONTANA		
SHEET 1 of 1	DRAWN BY ARM	REVIEWED BY EMK	DATE 10/01/08



BENZENE CONCENTRATION CONTOURS

- > 5,000 µg/L
- 500 µg/L TO 5,000 µg/L
- 5 µg/L TO 500 µg/L

SEPARATE PHASE HYDROCARBONS IN SOIL

- > 2 FEET
- 1.5 FEET TO 2 FEET
- 1.0 FEET TO 1.5 FEET
- 0.5 FEET TO 1.0 FEET

KEY:

0 15 30 60
SCALE: 1" = 60'

MW-3 (3,000) ● MONITORING WELL LOCATION WITH BENZENE CONCENTRATION IN µg/L

30 ○ LIF BORING LOCATION

41 ○ LIF CONFIRMATIONAL SAMPLING LOCATION

— BENZENE CONCENTRATION CONTOUR IN µg/L, DASHED WHERE INFERRED, QUERIED WHERE UNCERTAIN

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Issaquah, Washington 98027

PROJECT 56401.1

PREPARED FOR ACE WESTCHESTER SPECIALTY GROUP

LOCATION HIGHWAY 35
POLSON, MONTANA

SHEET 1 of 1

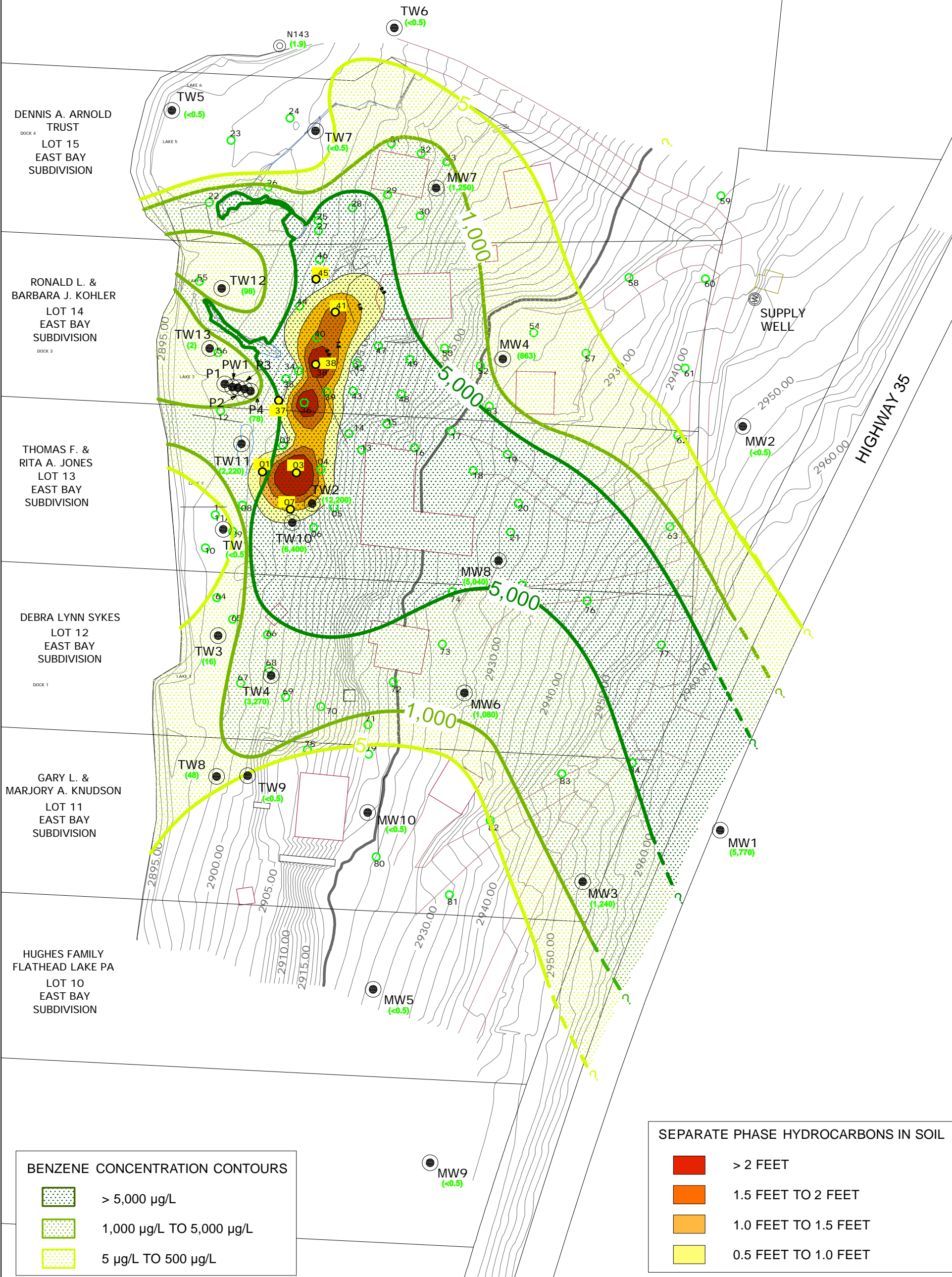
DRAWN BY ARM

REVIEWED BY EMK

DATE 10/01/08

FIGURE 10

DISTRIBUTION OF BENZENE IN SHALLOW GROUND WATER
JULY 7 THROUGH JULY 8, 2008

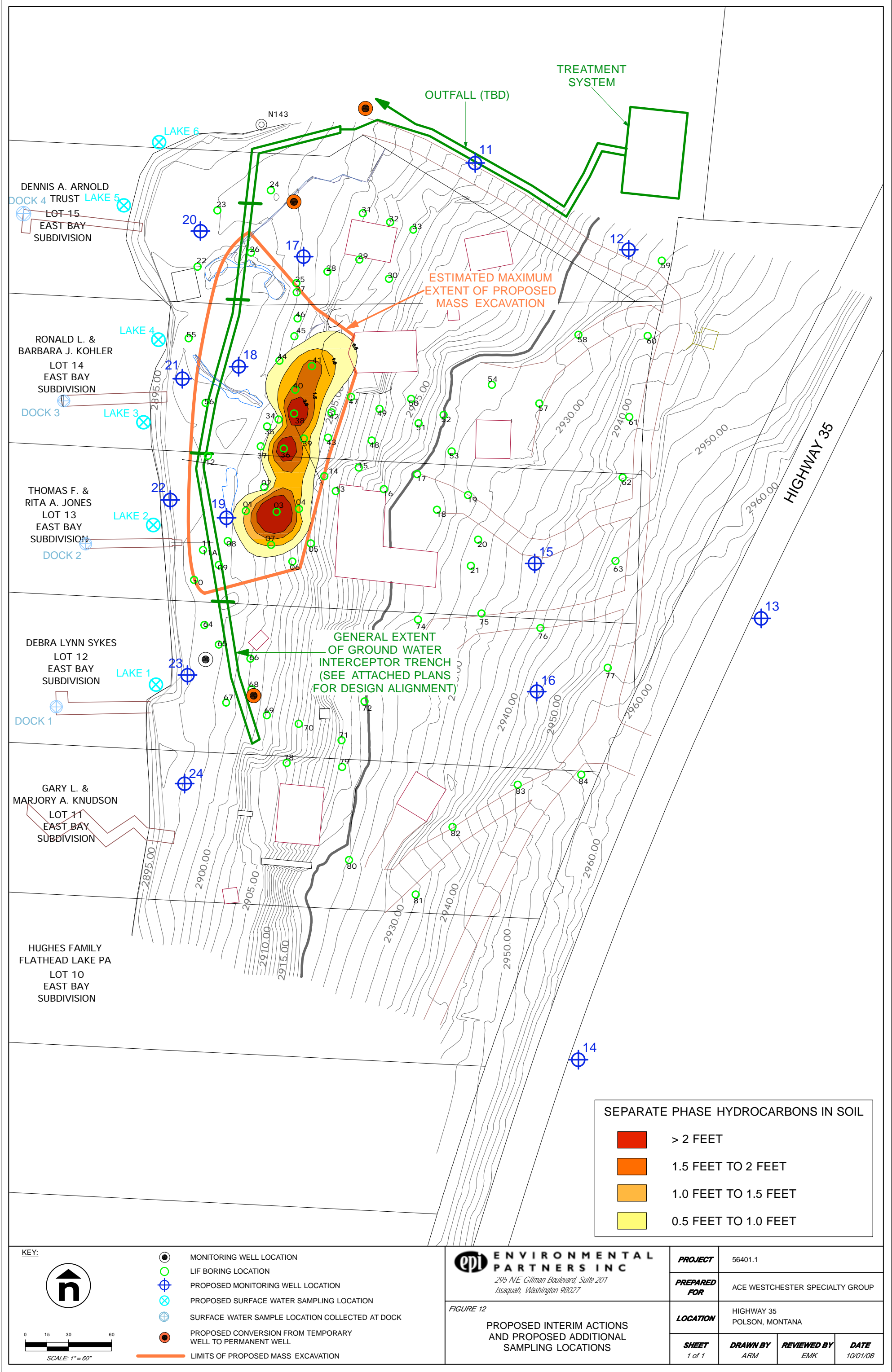


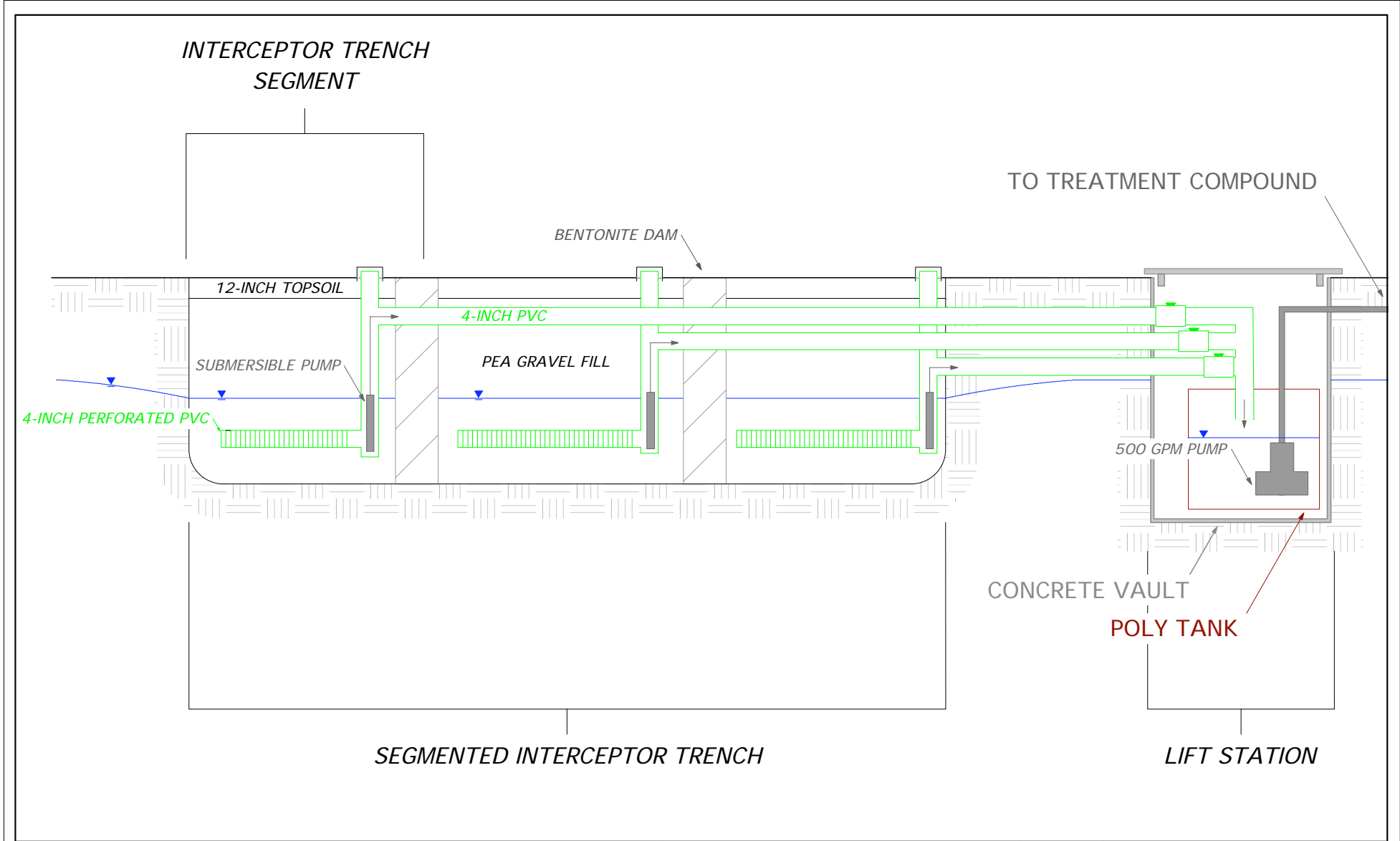
BENZENE CONCENTRATION CONTOURS

- > 5,000 µg/L
- 1,000 µg/L TO 5,000 µg/L
- 5 µg/L TO 500 µg/L

SEPARATE PHASE HYDROCARBONS IN SOIL

- > 2 FEET
- 1.5 FEET TO 2 FEET
- 1.0 FEET TO 1.5 FEET
- 0.5 FEET TO 1.0 FEET





KEY:

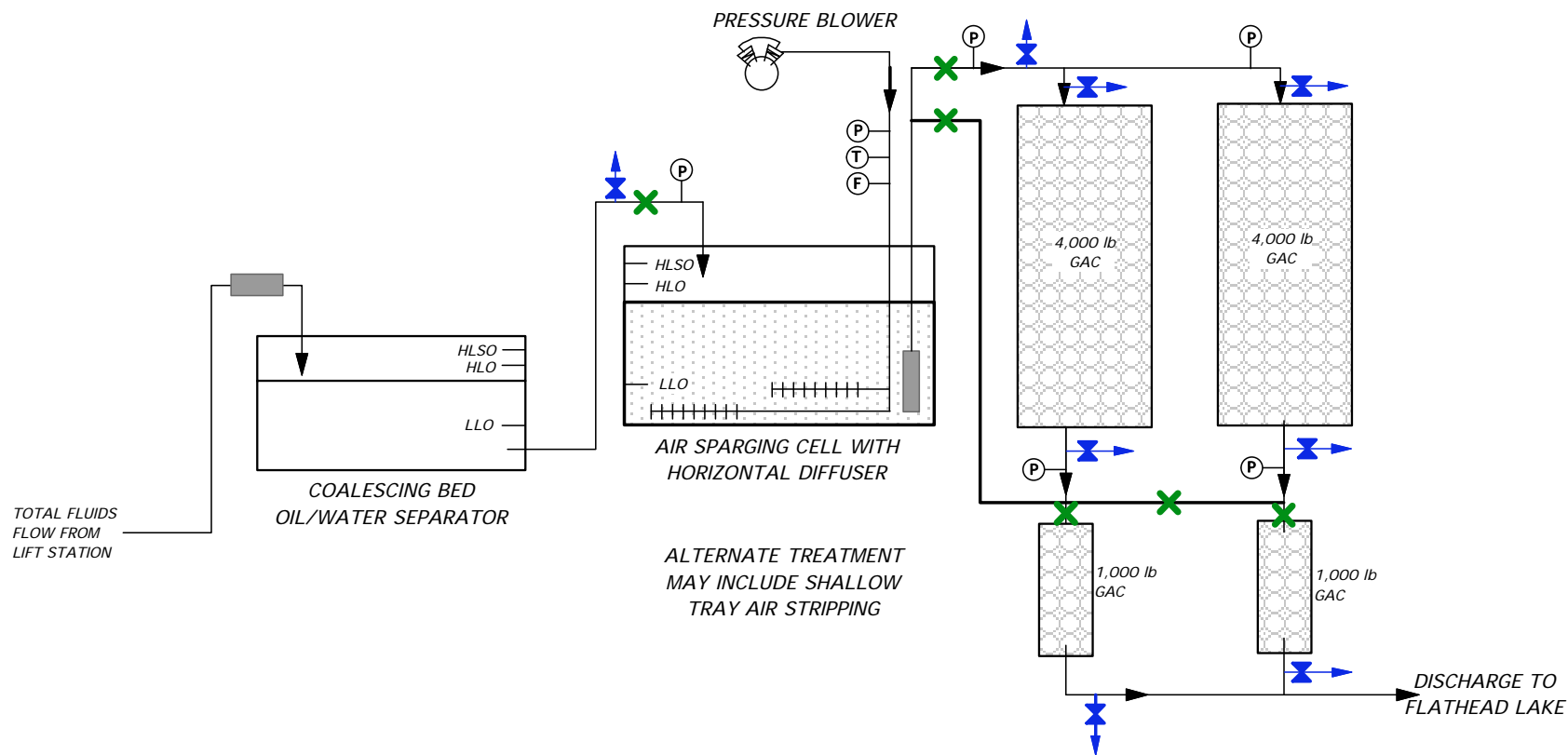
NOT TO SCALE

epl ENVIRONMENTAL PARTNERS INC
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 Issaquah, Washington 98027

FIGURE 13

DETAIL OF TYPICAL TREATMENT TRENCH

PROJECT	56401.1		
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LOCATION	HIGHWAY 35 POLSON, MONTANA		
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KEY:

HLSD = HIGH LEVEL SHUT OFF

HLO = HIGH LEVEL OFF

LLO = LOW LEVEL ON



SHUT OFF VALVE



SAMPLE PORT



FLOW METER



PRESSURE GAGE



TEMPERATURE GAGE



FLOW SAMPLING PORT

NOTE: TREATMENT DEPENDENT ON FLOW AND CONCENTRATION



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FIGURE 14

WATER TREATMENT SYSTEM
CONCEPTUAL DESIGN

PROJECT

56401.1

**PREPARED
FOR**

ACE WESTCHESTER SPECIALTY GROUP

LOCATION

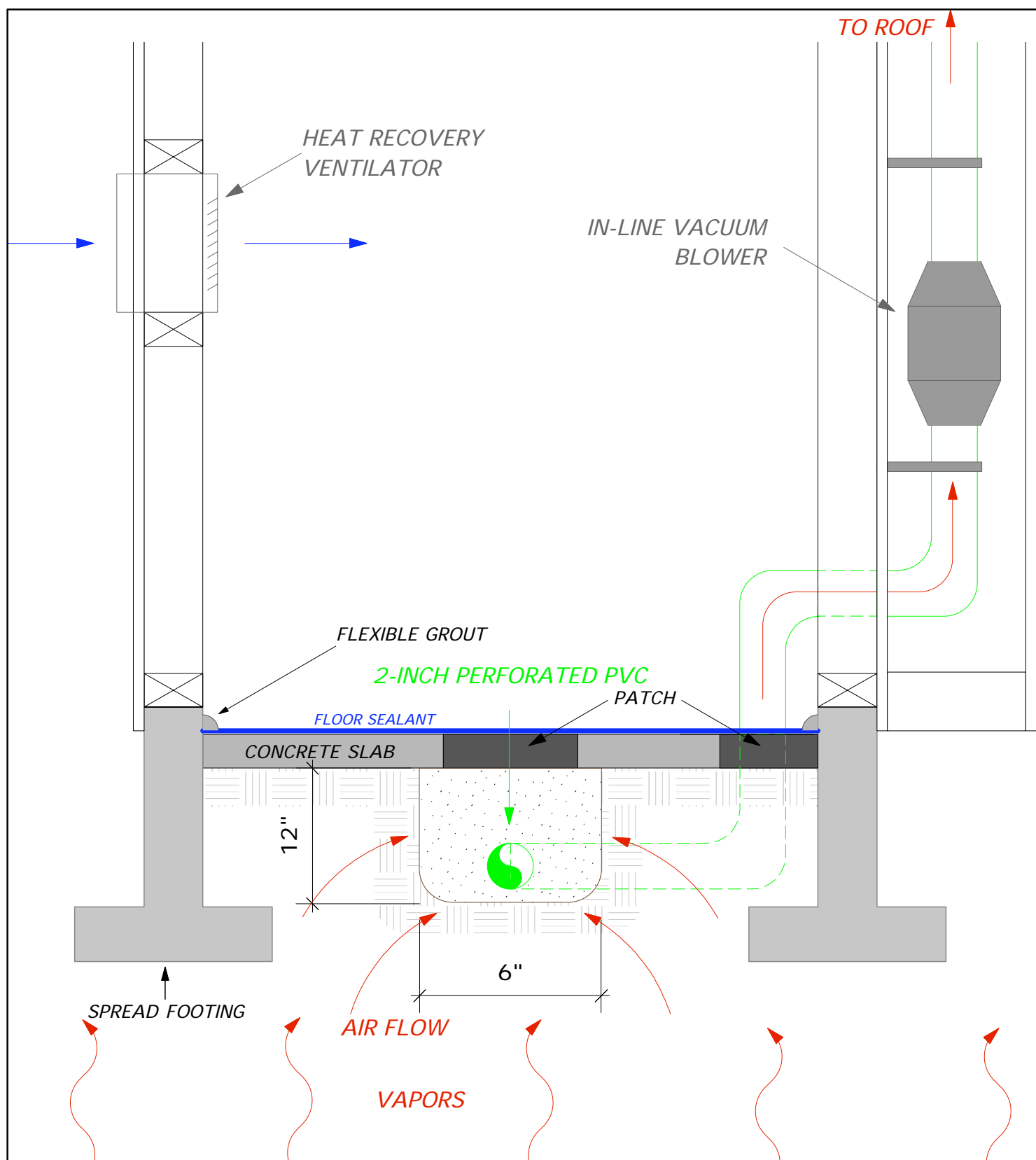
HIGHWAY 35
POLSON, MONTANA


SHEET
1 of 1

DRAWN BY
MMH

REVIEWED BY
TCM

DATE
10/01/08



KEY:	 ENVIRONMENTAL PARTNERS INC 295 NE Gilman Boulevard, Suite 201 Issaquah, Washington 98027	PROJECT 56401.1	
		PREPARED FOR ACE WESTCHESTER SPECIALTY GROUP	
	FIGURE 15 TYPICAL VAPOR MITIGATION SYSTEM	LOCATION HIGHWAY 35 POLSON, MONTANA	
		SHEET 1 of 1	DRAWN BY EMK REVIEWED BY TCM DATE 10/01/08

NOT TO SCALE